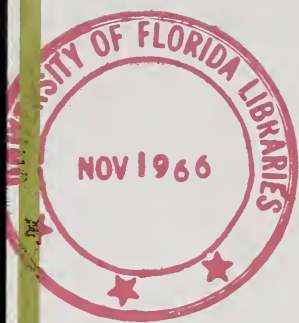
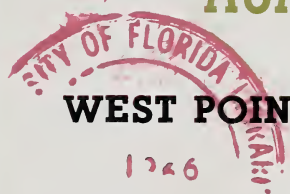


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UNITED  
STATES  
MILITARY  
ACADEMY

MENTS DEPARTMENT



WEST POINT • NEW YORK

1966 - 1967  
CATALOGUE

ONE HUNDRED SIXTY-FIFTH YEAR



UNITED

STATES



MILITARY ACADEMY

CATALOGUE

1966 – 1967

ONE HUNDRED SIXTY-FIFTH YEAR

# 1966

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## ACADEMIC CALENDAR 1966-67

### 1966

1 July	Friday	New Fourth Class enters (Class of '70).
4 July	Monday	Independence Day. (Duties suspended.)
28 August	Sunday	Beginning of Reorganization Week.
3 September	Saturday	End of Reorganization Week.
5 September	Monday	Labor Day. (Duties suspended.)
6 September	Tuesday	First Term begins.
30 September- 2 October	Friday- Sunday	Homecoming Weekend.
1 October	Saturday	(Classes suspended.)
11 November	Friday	Veterans Day. (Classes suspended.)
24 November	Thursday	Thanksgiving Day. (Classes suspended.)
21 December	Wednesday	Christmas leave begins at 12:00 noon.

### 1967

3 January	Tuesday	Christmas leave ends at 5:30 p.m.
21 January	Saturday	First term ends at 12:00 noon.
23 January	Monday	Second term begins.
1 February	Wednesday	Graduate Record Exam for 1st Class.
22 February	Wednesday	Washington's Birthday. (Classes suspended.)
23 March	Thursday	Spring leave for three upper classes begins at 3:15 p.m.
27 March	Monday	Spring leave for three upper classes ends at 6:00 p.m.
20 May	Saturday	Armed Forces Day. (Classes suspended.)
27 May	Saturday	Second Term ends at 12:00 noon for 1st Class.
30 May	Tuesday	Memorial Day. (Duties suspended.)
1 June	Thursday	Second Term ends at 12:00 noon for underclasses.
4 June	Sunday	Baccalaureate Sunday.
7 June	Wednesday	Graduation.
3 July	Monday	New Fourth Class enters (Class of 1971).



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## MISSION OF THE MILITARY ACADEMY

The mission of the United States Military Academy is to instruct and train the Corps of Cadets so that each graduate will have the qualities and attributes essential to his progressive and continued development throughout a career as an officer of the Regular Army.

Inherent in this mission are the following objectives:

1. Mental—To provide a broad collegiate education in the arts and sciences leading to the Bachelor of Science degree.
2. Moral—To develop in the cadet a high sense of duty and the attributes of character with emphasis on integrity, discipline, and motivation essential to the profession of arms.
3. Physical—To develop in the cadet those physical attributes essential to a career as an officer of the Regular Army.
4. Military—To provide a broad military education rather than individual proficiency in the technical duties of junior officers. Such proficiency is, of necessity, a gradual development, the responsibility for which devolves upon the graduates themselves and upon the commands and schools to which they are assigned after being commissioned.

## ADMINISTRATION

The United States Military Academy is under the general direction and supervision of the Department of the Army. The Secretary of the Army has designated the Chief of Staff of the Army as the officer in direct charge of all matters pertaining to West Point.

The immediate government and military command of the Academy and the military post at West Point are vested in the Superintendent. The Dean of the Academic Board coordinates the activities of the academic departments and advises the Superintendent on academic matters. The administration and military training of the Corps of Cadets are under the responsibilities of the Commandant of Cadets, who is also head of the Department of Tactics.

SUPERINTENDENT:

**Maj. Gen. Donald V. Bennett, USA.**

CHIEF OF STAFF:

**Col. Ernest P. Lasche, GS.**

DEAN OF ACADEMIC BOARD:

**Brig. Gen. John R. Jannarone, USA.**

COMMANDANT OF CADETS:

**Brig. Gen. Richard P. Scott, USA.**

INFORMATION OFFICER:

**Lt. Col. Robert E. Kren, Arty.**

DIRECTOR OF ADMISSIONS AND REGISTRAR:

**Col. Robert S. Day, USA.**

ASSISTANT DIRECTOR OF ADMISSIONS:

**Lt. Col. George A. Garman, Jr., Arty.**

## HISTORY OF WEST POINT

The United States Military Academy was established officially on 16 March 1802 at West Point, a key Hudson River military fortress during the Revolution, and was opened on 4 July 1802.

Two compelling reasons made the formation of an American military academy at that time both logical and necessary: the experience of the Revolutionary War; and the ominous international political situation when Thomas Jefferson became President in 1801.

The experience of the Revolutionary War, during which America had to rely in large part on foreign drillmasters, artilleryists, and trained engineers, made the military and political leaders of the day energetic backers of a military academy. The earliest proposal was in 1776 by Col. Henry Knox who recommended "An Academy established on a liberal plan . . . where the whole theory and practice of fortification and gunnery should be taught." The papers of Gen. Benjamin Lincoln, Gen. Jedediah Huntington, Secretary of War Timothy Pickering, John Adams, Alexander Hamilton, and George Washington mention time and again the need for an academy. In his annual messages to Congress, Washington always included a plea that the Congress provide facilities for the study of military art. In 1797 in his eighth annual message, for example, he said:

The institution of a military academy is also recommended by cogent reasons. However pacific the general policy of a nation may be, it ought never to be without a stock of military knowledge for emergencies. . . . [The art of war] demands much previous study, and . . . [knowledge of that art] . . . in its most improved and perfect state is always of great moment to the security of a nation. . . . For this purpose an academy where a regular course of instruction is given is an . . . expedient which different nations have successfully employed.

The military academies that "different nations" had "successfully employed" and that Washington likely had in mind were England's Royal Military Academy at Woolwich, founded in 1741, and France's Ecole Polytechnique, founded in 1794. The Royal Military College at Sandhurst in England was founded the same year as our own Academy, 1802. And Washington quite obviously realized that complete independence for America called not only for the severance of political ties from England and the formation of an independent political state, but also for independence in every facet of national life and culture: in law, religion, agriculture, shipbuilding, trading, manufacturing, and military

science. How deeply he continued to feel about the need for an Academy appears in a letter written 2 days before his death and addressed to Alexander Hamilton:

The establishment of an Institution of this kind, upon a respectable and extensive basis, has ever been considered by me as an object of primary importance to this country; and while I was in the Chair of Government, I omitted no opportunity of recommending it, in my public speeches and other ways, to the attention of the Legislature.

The second compelling reason for the immediate establishment of an American military academy was the ominous international political situation of 1801–02. The previous two decades had been troublesome ones. The weak and ineffectual Articles of Confederation and Perpetual Union, trouble with the Barbary pirates, Shays' Rebellion, boundary disputes, frontier battles, currency quarrels; these had plagued the young nation, and now it was threatened by the danger of involvement in the complexities that were coming as an aftermath of the French Revolution of 1789. Public opinion moved toward more energetic national government and better trained armed forces.

So it was that Congress, by its Act of 16 March 1802, authorized a Corps of Engineers, set its strength at 5 officers and 10 cadets, and provided that it be stationed at West Point in the State of New York and constitute a Military Academy.

The garrison site of West Point, consisting of 1,795 acres purchased from Stephen Moore in 1790, had been occupied by the Army since 1778. Hence, barracks and other buildings, while inadequate, were available for housing and instruction, and Maj. Jonathan Williams, grandnephew of Benjamin Franklin and Chief of the Corps of Engineers, who had been appointed as the first Superintendent, was able to open the Academy on 4 July 1802 with 10 cadets present.

The initial purpose of the Academy was to train military technicians for all branches of the military service, to encourage the study of military art nationally and thus raise the level of training of the militia, and to encourage the practical study of every science. This last, it should be noted, at a time that many other American academic institutions looked at the sciences with suspicion and hostility. How well the Academy succeeded in its purpose for the first 10 years of its existence was summarized by the most authoritative historian of that period of American life, Henry Adams. In his *History of the United States* (9 vols., 1889–91), covering the Jefferson and Madison administrations, Adams offers the tribute that American scientific engineering "... owed its efficiency and almost its existence to the military school at West Point established in 1802."

#### 4 HISTORY OF WEST POINT



In the year 1812 the growing threat of war with England impelled Congress to pass the Act of 29 April 1812 by which the strength of the Corps of Cadets was increased to 250, the academic staff enlarged, and the cadets placed under the discipline of published regulations. A chaplain was authorized who in addition to his religious duties was "to officiate as Professor of Geography, Ethics, and History." The act required also that the cadets be taught "all the duties of a private, a noncommissioned officer, and an officer." This requirement, says Emory Upton in *The Military Policy of the United States* (1904), was the "key to the character for efficiency and discipline which the graduates have since maintained."

The record of the War of 1812 shows that the Academy graduates served their country well. A quarter of the more than 100—all under 30 years of age—who saw action were killed or wounded; and not one of the fortifications constructed under their direction was captured. Henry Adams was appreciative of their technical skill. "During the critical campaign of 1812," he wrote, "the West Point Engineers doubled the capacity of the little American army for resistance."

The experience of the War of 1812, that gave the Nation new self-assurance, affected the Academy's educational aims in the period of peace which followed. No longer was the enemy an immediate threat on our borders; American nationality had been firmly established. National interest called now for canals, roads, railroads, and the exploitation of the soil and its mineral wealth. The accurate mapping of rivers, the deepening of their channels, the constructing of lighthouses and beacon lights: these were needed to make communication easier. And the preliminary work of prospecting and surveying had to be done.

That the Academy graduates of this era were men who through force of character and training could assume leadership in the performance of these tasks was due largely to the genius of Col. Sylvanus Thayer, Superintendent from 1817 to 1833. The "Father of the Military Academy" had one ideal before him: to produce men who would be trained and worthy leaders. He demanded of the cadets excellence of character and excellence of knowledge, the two integrating qualities of such leadership. But he knew that to achieve his ideal he must master and guide the day-to-day routine of the Academy, and so it was that he let no detail of character training or discipline, of curriculum content, of textbooks, of teaching methods, of extracurricular activities, of physical plant escape his attention.

Thayer grasped at once the need of the country for engineers, and therefore made courses in civil engineering the core of the curriculum.

Under his direction, instruction in that subject eventually included the properties, preparations, and use of materials for construction; the art of construction generally, including decorative architecture; the manner of laying and constructing roads; the construction of bridges; the principles regulating the removal of obstructions impeding river navigation; the survey, location, and construction of canals and railroads; and the formation of artificial and the improvement of natural harbors.

A list of the Academy's achievements in the field of civil engineering that can be attributed to the farseeing genius of Thayer would include trigonometrical and topographical surveying; methods of triangulation; magnetic declination; and the systems used in locating, surveying, and dividing the public lands of the United States. Francis Wayland, the president of Brown University from 1827 to 1855, said in 1850 in a report to the Corporation of Brown University that West Point graduates did "more to build up the system of internal improvement in the United States than [the graduates of] all other colleges combined."

To provide objective criticism of his work, Thayer had the aid of a Board of Visitors. A regulation for the Government of the Military Academy, approved by Secretary of War William H. Crawford on 1 July 1815, provided for the appointment of such a Board to consist of five "competent gentlemen," with the Superintendent as President, who should attend at each of the annual and semiannual examinations and report thereon to the Secretary. This excellent custom of having a Board of Visitors has lasted to the present day. From the beginning their criticism was pertinent and helpful; nor is this surprising when the long list of those who have been members is scanned, for thereon the names of men like Edward Everett, George Bancroft, George Ticknor, Horace Mann, and Daniel Coit Gilman appear. Thayer knew the value of the intelligent lay point of view and welcomed the Board's comments on his curricular shift to civil engineering, his innovations in educational method, and his system in general.

His innovations in educational methods insured that the cadets not only learned but retained their subjects. Basically, he demanded that the cadets develop habits of mental discipline and maintain standards of scholarship that have grown in importance the more they have been tested through the years. He emphasized habits of regular study, he laid down the rule that every cadet had to pass every course—any deficiency had to be made up within a specified time or the cadet would be dropped. To carry out these rigorous standards he limited the classroom sections to from 10 to 14 members; he rated these sections in

order of merit and directed that cadets be transferred from one to the other as their averages rose or fell.

These methods and standards of Thayer's system are still used at the Academy, and Thayer's insistence on leadership integrated by excellence of character and excellence of knowledge has been the cornerstone of the Academy's training since his day. Emerson, visiting West Point in 1863, spoke of the "air of probity, of veracity, and of loyalty" the cadets had; and when in 1898 the present coat of arms was adopted, the motto thereon of "Duty, Honor, Country" was but a later generation's attempt to put Thayer's ideal into words.

To the casual student it might seem that until about 1860 West Point was filling the almost dual roles of national military academy and of national school of civil engineering. But despite the curricular emphasis on civil engineering and the renown of her graduates in that field, the Academy never forgot her deepest and most abiding obligation to the Nation: to send forth graduates trained in the art and science of war. That the obligation was fulfilled is attested for these early years by the records of the Mexican and Civil Wars. The record of the Mexican War is told best in the words of Gen. Winfield Scott:

I give it as my fixed opinion, that but for our graduated cadets, the war between the United States and Mexico might, and probably would, have lasted some four or five years, with, in its first half, more defeats than victories falling to our share; whereas, in less than two campaigns we conquered a great country and a peace, without the loss of a single battle or skirmish.

The record of the Civil War shows that the Confederacy used graduates whenever and wherever possible; the Union, in the beginning, used "political" generals. Defeat after defeat proved the need for professionally trained officers and, in the last year of the war, all senior commanders of the Union armies were Academy graduates. Grant, Lee, Sheridan, Jackson, to name but a few on both sides, were all from West Point.

After the Civil War, changing conditions necessitated a shift in the Academy's curriculum away from the emphasis on civil engineering. The first Morrill Land-Grant Act of 1862, granting Federal land to each state "for endowment, support, and maintenance of at least one college where . . . military tactics . . . [and] . . . such branches of learning as are related to agriculture and the mechanic arts [shall be taught], enabled American education to be enormously expanded. New technical and engineering schools, supplementing those that had been founded in the second quarter of the nineteenth century, made it

possible for West Point to drop its strong emphasis on engineering subjects. But even had these new schools not come into being, the Academy would have found it impossible to keep on producing both adequately trained Army officers and adequately trained engineers. The tremendous expansion of the body of scientific knowledge during these years—the last half of the nineteenth century—was enforcing specialization in all technical fields. And since the science of war likewise expanded greatly it became obvious that the Army officer would need specialization in his particular branch of service.

The Academy met these changed conditions by severing its direct relationship with the Corps of Engineers; from 1866 on it was no longer mandatory that the Superintendent be a member of that Corps. To take care of officer-specialization demand, several Army post-graduate schools were set up, and West Point gradually came to be looked on as only the initial step in the Army officer's education. As the Academy approached its centennial, the military objective of the curriculum came to be the giving of general instruction in the elements of each military branch.

After its centennial, in 1902, the Academy underwent a thoroughgoing structural renovation and became known as the New West Point. Coincident with this reconstruction, Gen. Albert L. Mills, the Superintendent, had the entire curriculum, military and academic, reassessed. As a result, military instruction was transformed from a series of mechanical drills to practical training in minor tactics and field work. Complete correlation was developed between instruction and actual field conditions. One of Mills' special hobbies was English; he believed that the Army officer should be able to express himself clearly in speech and writing. To that end, he strengthened greatly the course in English. A gradual liberalization of the curriculum went on until the outbreak of World War I.

World War I tested and proved, as never before, the soundness of the Academy's curriculum and training. Although in order to meet the sudden and great demand for trained officers the course was shortened and a number of classes graduated early, the qualities and abilities of the graduates remained high.

After the close of the war the Academy's further development was placed in the hands of Gen. Douglas MacArthur, who became Superintendent on 12 June 1919. General MacArthur's primary concern was an adaptation of the curriculum in terms of the recent war. It was known, for instance, that the concept of total war, new in military his-



tory, required cadets to have a knowledge of national production, transportation, and social problems; that something of the new developments in weapons and tactics had to be incorporated into cadet instruction; and that shortcomings in the officers' physical development, seen clearly in the stress of battle, made a longer and more vigorous physical training program necessary. But at the same time it was realized that the tremendous advances in the art and science of war, made under the pressure of actual conflict, presaged further development of Army post-graduate schools, and hence a growing emphasis upon a more broadly conceived basic curriculum at West Point. The belief was reached that the Academy would serve best by giving the cadets a combination of general and technical education, in this way providing a solid foundation for a professional military career.

The part of the curriculum General MacArthur changed with the greatest vigor was that relating to physical education. He believed firmly that physical fitness was a basic requirement of an officer; and he planned a strenuous program of compulsory gymnastic instruction complemented by an intramural program of 14 sports in which every cadet had to take part. The wisdom of his foresight has been reflected ever since in the excellent physical condition of all cadets at all times.

Soon after General MacArthur's incumbency the policy of a liberal as well as a technical education got renewed emphasis by the introduction of a course in economics and government under the Professor of English and History. In 1926 the Department of English and History was reorganized into the Department of Economics, Government, and History, and a separate Department of English established. In succeeding years curricular reforms took place in modern languages, natural philosophy, and mathematics.

All phases of training were greatly intensified during the rearmament years, 1939-41; and the excellence of the curriculum and the methodology of the Academy was clearly demonstrated by the performance of its graduates in World War II.

But much was learned from World War II and Korea. A series of studies and reviews by distinguished educators and military leaders led to revised concepts of what professional military education should mean. A comprehensive analysis conducted from 1956 to 1960 of the entire curriculum and training program resulted in increased emphasis on modern technological advances and the increasingly complex aspects of national security and international relations. Related courses have been coordinated to bring their direction and emphasis into common focus.

Because of the increased technological character of the weapons and techniques of war, the coverage of chemistry, nuclear physics, electronics, and basic astronautics has been increased. Similarly, the assignment of officers early in their service to friendly foreign countries in military assistance advisory capacities and the greatly increased participation of officers later in their careers in international and national agencies concerned with national security policies has led to improved coverage of geography, history, government, economics, and ideologies of countries throughout the world. In order to challenge each cadet and to enable him to proceed as rapidly as his capabilities permit, the number and scope of advanced courses were expanded, and in order to capitalize on the aptitudes and interests of individual cadets, an elective program was introduced. Cadets of proven aptitude and abilities were authorized to pursue courses in addition to those prescribed. In 1964 the opportunity of cadets to participate in the electives program was doubled. Every cadet can now choose and pursue an elective in each semester of his last 2 years at the Academy. Thus he can pursue at least 4 courses of his own choice. He can choose any 4 of the elective courses offered; he can choose those lying in broad areas of elective emphasis or he can follow a related or sequential program in more defined educational areas.

The academic and military training program is a vital, everchanging one that is continuously examined and adjusted to the changing times, and yet the Academy builds always on the cornerstone of the Thayer system: leadership integrated by excellence of character and excellence of knowledge.

The development of character and integrity in the members of the Corps of Cadets is a basic objective of the Academy. The Cadet Honor Code and System are officially recognized as primary means through which this objective is attained.

From the earliest days of recorded history it has been universally recognized that unquestioned integrity is an essential trait of the military leader. Colonel Sylvanus Thayer, the father of the Military Academy, determined that the Academy should produce leaders whose foundation was built on honor, integrated with a strong sense of discipline and excellence of knowledge. Since his day the role of honor has been maintained by the Corps and fostered by the authorities of the Academy. General Douglas MacArthur, shortly after World War I, was instrumental in formalizing the Honor Code and System and making them officially sanctioned means of building character. Today, the Honor Code is a most cherished possession of the Corps of Cadets and of the "Long Gray Line" of graduates.

The Honor Code has never outgrown its original and simple meaning—that a cadet will not lie, cheat, or steal. The Code requires complete integrity in both word and deed of all members of the Corps and permits no deviation from those standards. Not only is the cadet expected to tell the truth on all occasions, but also to avoid quibbling or evasive statements. In the classroom a cadet does his own work. Under no circumstances will he take unfair advantage of his classmates. The maintenance of these high honor standards is the responsibility of each cadet, and each cadet is expected to report himself or any other cadet for violations of the Honor Code. These exacting standards are rigidly enforced, and any intentional violation by a cadet is cause for separation from the Military Academy.

The Honor System is an integral part of the Honor Code and is the method by which the Honor Code is applied in the highly organized life of a cadet. As an example, cadets may account for their absence from their rooms simply by marking their absence cards. This marking is accepted as the cadet's word that his absence is authorized, and that he will take no advantage of this privilege. Cadets are also often required to indicate by signature that they have complied with official instructions. These devices are part of the Honor System that requires the cadet to make decisions based on his sense of honor many times a

day during his 4 years at the Academy. In this respect the Honor System serves as a training vehicle to instill within each cadet the desire to abide by the precepts of the Honor Code.

For its success the Honor Code depends upon the Corps. The Cadet Honor Committee, elected by the Corps, monitors the operation of the Honor Code and System. It explains to the Corps the principles upon which the Code is based, and guards against practices inconsistent with that Code. Thus, this Committee insures that the high standards of the Code are maintained and transmitted, undiluted, from class to class. Its procedures follow a set pattern, and its members have responsible authority. The Committee has no punitive powers, its functions being entirely investigative and advisory. If the Committee reports a cadet to the Commandant for an honor violation, the Commandant takes appropriate official action to insure that the standards of the Code are upheld while protecting the rights of the cadet in accordance with the provisions of the Uniform Code of Military Justice.

One of the Honor Committee's most important tasks is to supervise the indoctrination of the New Cadets in the principles of the Code. This indoctrination is both intensive and continuous and includes informal discussions, as well as scheduled lectures. Though New Cadets do not take an active part in the Honor System until they have received adequate instruction, they are expected to adhere to the same standards as other cadets under the Honor Code. It is soon apparent to New Cadets that all members of the Corps share an inherent pride in upholding the exalted position of the Code. This observation, coupled with the indoctrination program, raises the varying standards of honor of an entering class to the uniformly high plane which the Corps has established, and expects from its members.

The devotion of the Corps to the Honor Code is especially strong. In the opinion of both cadets and graduates, it is a particularly vital part of their education, training, and character-building at the Academy and makes a lasting impression on them.



## EDUCATIONAL ACTIVITIES

The Military Academy offers varied opportunities for cadets who are interested in exploring fields of academic study on a broader or more intensive basis than is provided in the formal academic curriculum. Seminars, special guest lectures, discussion groups, student conferences, and intercollegiate debates are undertaken on cadet initiative and carried out primarily with cadet effort. The largest and most active organization in this field is the Debate Council and Forum whose members engage in intercollegiate debates and discussions in all parts of the United States during the academic year. This organization also sponsors voluntary seminars on public affairs topics in which cadets express interest.

### Student Conference on United States Affairs

Annually since 1949, West Point, with the assistance of private financial aid, has sponsored a Student Conference on United States Affairs, known as SCUSA. Outstanding students from about 90 United States and Canadian colleges and universities gather for a four-day conference in early December with approximately 35 senior individuals from college faculties, business, and government. Meeting in small seminars, the participants discuss major aspects of U.S. National Security Policy and formulate policy recommendations. The Cadet Debate Council and Forum administers these conferences and acts as host.

The purposes of these conferences are (1) to produce an informative examination and discussion of U.S. National Security Policy, (2) to provide an outstanding representation of college students with an appreciation of the complexities of government policy formulation, and (3) to broaden students' contacts with their contemporaries in an academic endeavor.

The principal speakers at the XV through the XVII conferences are given below:

SCUSA XV: 4-7 December 1963

THE HONORABLE W. AVERELL HARRIMAN

Under Secretary of State for Political Affairs

HIS ROYAL HIGHNESS BERNHARD, Prince of the Netherlands

## SCUSA XVI: 2-5 December 1964

MR. KENNETH T. YOUNG, JR.

President, The Asia Society, Former Ambassador to Thailand

THE HONORABLE ORVILLE L. FREEMAN

Secretary of Agriculture, Former Governor of Minnesota

## SCUSA XVII: 1-4 December 1965

HONORABLE FRANK PACE, JR.

President, The International Executive Service Corps

Former Secretary of the Army

GENERAL MAXWELL D. TAYLOR

Special Consultant to the President

Former Ambassador to Republic of Vietnam

Former Chairman, Joint Chiefs of Staff

## The National Debate Tournament

Annually, since 1947, the Debate Council and Forum has sponsored the National Debate Tournament which marks the culmination of the national intercollegiate forensic activities for the academic year. For administrative purposes the United States is divided into eight debating districts, each headed by a chairman and a district committee. During the debating season approximately 600 colleges and universities compete within their respective districts in order to win 1 of 36 invitations to the national tournament held at West Point each spring.

## West Point Debate Council

The Debate Council, an activity within the Debate Council and Forum, sponsors an extensive program of forensic activities affording its members the opportunity of acquiring skills in tournament debating in competition with colleges and universities throughout the country. The Debate Council program for a typical year includes: seminars on debating techniques and the national debate topic, intra-squad practice debating, and varsity and novice intercollegiate competition.

Of particular interest is the varsity and novice intercollegiate tournament debating program. USMA debate teams participate in the leading college debate tournaments (36 in 1964-65 involving 347 debates with 150 colleges and universities). Through the caliber of its performance in major tournaments each year, West Point has achieved recognition as one of the leading schools in intercollegiate debating.

## West Point Forum

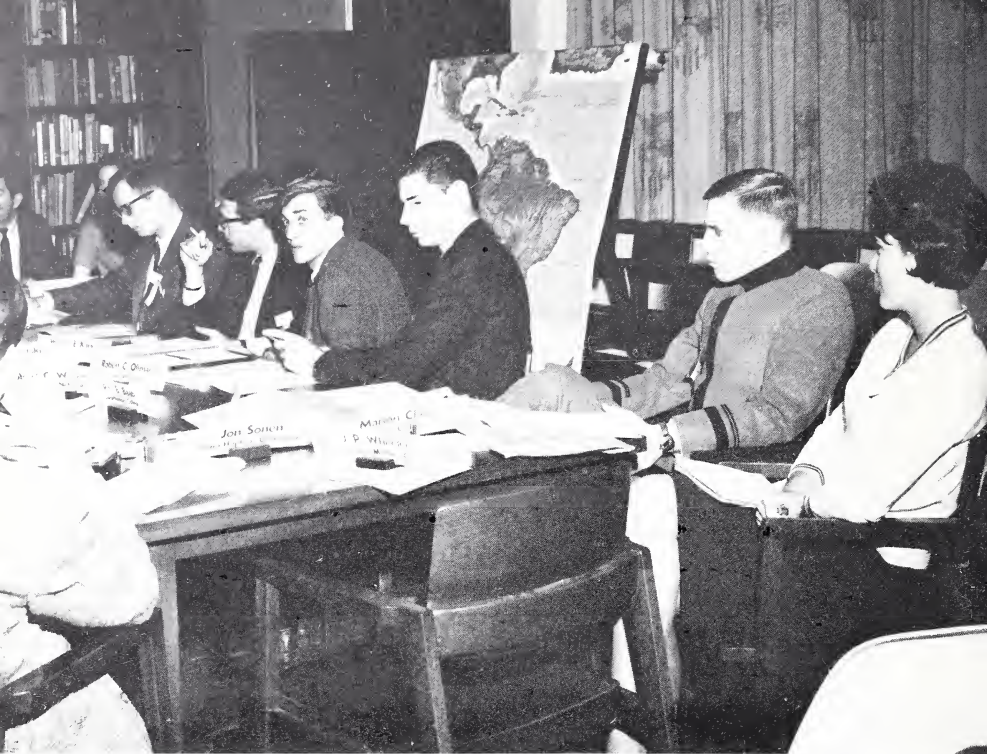
This cadet organization, a part of the Debate Council and Forum, provides the cadet an opportunity to widen his intellectual interests.

It conducts seminars on a variety of topics to prepare cadets to participate in a large number of student conferences and model United Nations assemblies throughout the country. In 1964-65, cadets participated in conferences at such institutions as Texas A. & M., McGill University, the United States Naval Academy, Princeton, and Columbia Universities. The Forum sponsors educational trips each year to the United Nations and to Washington, D.C., to allow cadets to observe at first hand the operations of the United Nations and the major branches of our own Government.

### **Cadet Participation in Scientific Events**

Cadets participate in a number of annual scientific events such as the Eastern Colleges Science Conference. The close proximity of West Point to a large number of governmental, cultural, scientific, industrial, and research activities has enabled the Military Academy to extend classroom discussions and laboratory exercises into "the field" in a highly effective manner through a program of educational trips. Cadets have visited such installations as the Brookhaven National Laboratories, the Nevis Cyclotron Laboratory at Columbia University, Bell Telephone Laboratories, the Research and Development Laboratories at Fort Monmouth, the International Electric Corporation, the Republic Aviation Corporation, the Texaco Laboratories, Charles Pfizer and Company, and Aberdeen Proving Ground.





## EXTRACURRICULAR ACTIVITIES

A West Point cadet is one of the busiest college students in the nation. Yet, despite a tight schedule including studies, classes, parades, and other military functions, he always manages to take advantage of the numerous extracurricular activities offered at the United States Military Academy.

As a future officer, the USMA cadet must be a many-faceted individual. To cope with the complexity of modern warfare and the requirements inherent in leadership, cadets will need to acquire confidence and a working knowledge in a variety of fields. Extracurricular and recreational activities, in conjunction with the Military Academy's academic requirements, help give cadets the varied interests, knowledge, and experience in working with others needed for their future careers.

During the summer facilities are provided for swimming and picnicking at Delafield Pond and Camp Buckner and picnicking at Constitution Island. Picturesque Flirtation Walk winds for three-quarters of a mile along the majestic Hudson, offering a peaceful and shady retreat from the walls of the barracks. Cadets stationed at Camp Buckner during the summer months of Yearling Year enjoy swimming, canoeing, fishing, skeet, water skiing, and sailing. In the fall the Corps takes one or more football trips to metropolitan areas where the bright lights are a welcome diversion. During the winter months, ice skating at Smith Rink and skiing on the post at the Victor Constant Ski Slope are extremely popular. The ski tows, snow-making machine, and ski trails are probably among the finest ski facilities on any campus in America. Throughout the academic year, frequent hops are held in either the Gymnasium or Cullum Hall and movies are shown in the Army Theater. Prominent entertainers and programs are frequently brought to the Academy for performances.

In addition to general recreational activities, there are 61 organized extracurricular activities. Student government type activities are the Honor Committee, Class Committees, and the Ring and Crest Committees in each Class.

Cadets also have available many sports, organized on a club level, that develop the physical prowess and skills that will serve them well later. Handball, fencing, rugby, and triathlon sports provide vigorous recreation. Pistol, rifle, and skeet-shooting clubs develop cadet skill with firearms. Competitive sailing and water polo teach cadets to handle boats and take care of themselves in the water. The Cadet Sky Diving Club provides parachute jumping experience, and the SCUBA Club,

underwater training for interested cadets. Facilities for all of these activities are available to all cadets.

But physical fitness is only one area in which the cadet must be proficient. Other clubs and organizations supplement academic study.

One of the largest and most active of these is the West Point Debate Council and Forum. Here, the future officer gets practice in public speaking and in the art of persuasion. The Student Conference on United States Affairs and the National Debate Tournament held at West Point attract participation by students and leaders from all over the country.

Also supplementing cadet studies are the Mathematics Forum, five Foreign Language Clubs, and Astronomy, Audio, Radio, and Rocket organizations. In the latter one, cadets have gained practical space-age experience in rocketry by launching their own homemade miniature rockets and by visiting Cape Kennedy and the George C. Marshall Space Center at Huntsville, Alabama.

Literary experience is another aspect of cadet extracurricular activity. Cadets put out their own yearbook, *The Howitzer*; their own monthly magazine, *The Pointer*; and a small handbook called *Bugle Notes* to acquaint new Fourth Classmen (Freshmen) with the customs, traditions, and history of West Point.

KDET is a cadet AM radio station, fully equipped for voice broadcasting. Other hobbyists can find a place in the Academy's Chess and Outdoor Sportmen's Clubs.

For those who are musically inclined, the Cadet Dance Orchestra and nationally-famed Cadet Glee Club provide musical outlets. Cadet Protestant, Catholic, and Jewish Chapel Choirs are also available to those cadets desiring to sing at Post religious services. These singing groups often perform for national television or concert audiences. Cadets also teach Sunday School for Post children.

Another community service cadet group, The Scoutmaster Council, annually hosts a Camporee, which draws as many as 2,500 Scouts from all over the Eastern seaboard.

The Dialectic Society provides musical and acting outlets for cadets. Highlighting its annual activities is the time-honored "100th Night Show," presented, as the name implies, 100 nights before Graduation. The show is written and produced entirely by cadets, who also provide all the actors.

Organized extracurricular activities are directed and administered almost entirely by the cadets themselves, subject to the approval of the Commandant of Cadets. There is an officer in charge of each activity, who acts in an advisory capacity. From these activities, cadets acquire



a wealth of knowledge or develop latent talent which subsequently will serve them well and be a source of pleasure in their careers as Army officers.

There are a number of large, well-equipped cadet reception rooms and lounges for cadets and their guests. Some have fully equipped snack bars, TV rooms, game rooms, and are normally open on weekends and holidays throughout the year. In addition, there are three Cadet Hostesses available to help plan the social and recreational programs for the Corps of Cadets. The Hostesses also provide assistance to cadets in obtaining accommodations for their guests during the year.

## RELIGIOUS ACTIVITIES

All cadets are provided a sound basic religious atmosphere. Each cadet must attend one of the weekly chapel services—Protestant, Catholic, or Jewish.

### Protestant

Protestant services are held in the Cadet Chapel every Sunday during the academic year and out-of-doors during the summer months. The Reverend James D. Ford, B.D., is the Chaplain, USMA. Mr. John A. Davis, Jr., is Organist and Choirmaster, USMA. The regiments alternate in their attendance at the early and late services. Denominational Services of Holy Communion are conducted each Sunday in St. Martin's Chapel according to the rites of the Episcopal, Lutheran, Presbyterian and Orthodox Churches. At the morning Worship Service the form of worship is nondenominational in character. Among the religious activities in which cadets take part are the Cadet Chapel Choir of 175 voices; the West Point Sunday School of 700 children of the Post taught entirely by 150 cadet teachers; the Cadet Chapel Acolytes; and a program of Morning Devotions, conducted every weekday at 6:30 a.m.

### Catholic

Catholic cadets attend Holy Trinity Chapel, the Catholic Chapel on the Post. The Right Reverend Monsignor Joseph P. Moore is the Rector, and is assisted by Reverend Robert F. McCormick and Reverend Edwin F. O'Brien. Each Sunday Catholic members of the cadet regiments alternate in attending the early and late Masses to facilitate frequent reception of Holy Communion and to give opportunity for assisting at High Masses. The late Mass is a Missa Cantata. A cadet Catholic choir sings at the High Masses and other liturgical ceremonies. Cadet commentators and readers assist at all Cadet Masses. Daily Mass is celebrated at 6:20 and 7 a.m. throughout the academic year. Confessions are heard on Saturday, daily at Mass time, and as desired. A cadet Cardinal Newman Forum meets each week. By means of lectures, instructions and seminars, it treats of religion, morals, and philosophy.





Cadet Chapel



Interior—Catholic Chapel



## Jewish

Jewish worship services are held in the Old Cadet Chapel every Sunday at 8:30 a.m. during both the academic year and the summer season. Rabbi Avraham Soltes is the Jewish Chaplain. High Holy Day Services are held for the cadets at Temple Emanuel of Great Neck, L.I., N.Y. where the Jewish Chaplain serves as Spiritual Leader. Festival Services are conducted in the Old Cadet Chapel and a special Passover service is held yearly at the U.S. Hotel Thayer. The Jewish Chapel Choir sings the Liturgical music at every service. The Jewish cadets also participate in the reading of the Liturgy and in the Torah service. Religious instruction for Post children of the Jewish faith is conducted by cadets on Sunday morning.



Sunday School Instruction for Post Children

## INTERCOLLEGIATE ATHLETICS

*Athletic Board:* Col. Elvin R. Heiberg (Chairman), Brig. Gen. Richard P. Scott, Brig. Gen. John R. Jannarone, Col. Frank J. Kobes, Jr., Col. Jerry G. Capka (Secretary).

*Director of Athletics:* Col. Jerry G. Capka

*Executive Officer:* Lt. Col. William C. Bishop

*Special Assistant to the Director of Athletics:* Col. Russell P. Reeder, Jr., USA (Ret)

*Assistant Director of Athletics:* Mr. John P. Riley

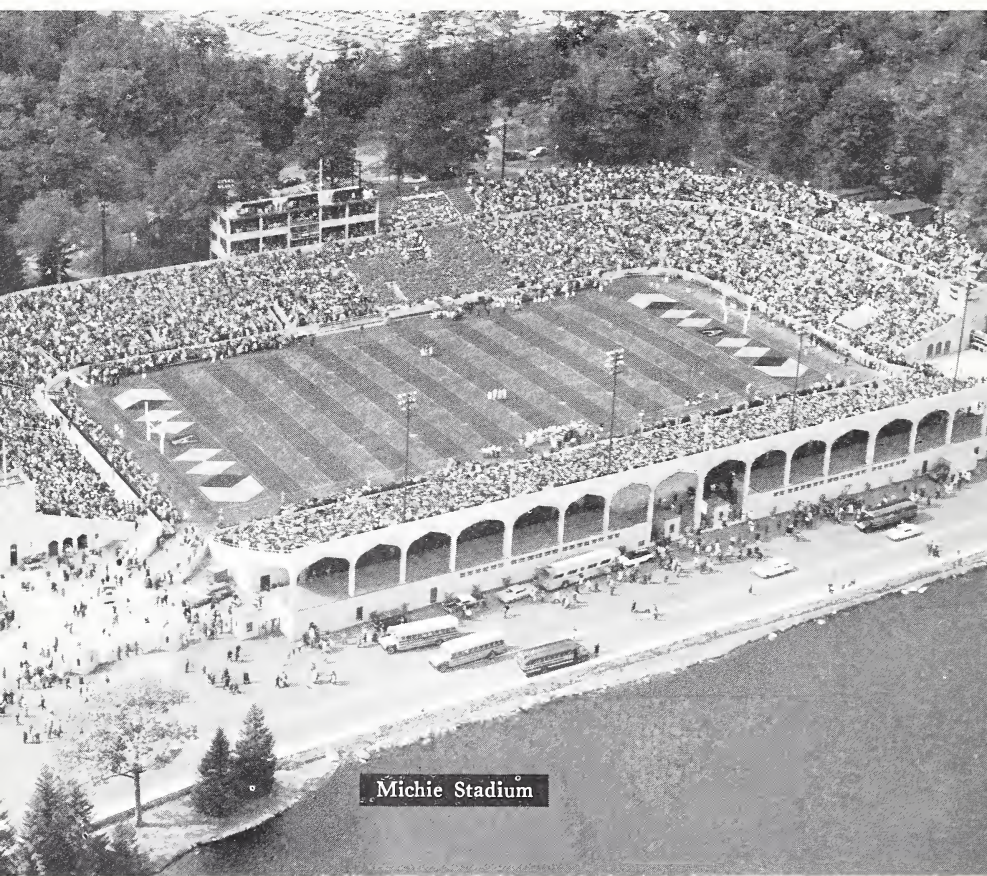
*Coaches:* Baseball and 150-pound Football, Eric Tipton. Basketball, Robert Knight. Asst: Michael H. Schuler. Cross Country and Track, Carleton Crowell. Football, Thomas B. Cahill. Assistants, Robert M. Mischak, William Meek, Robert R. Ward, Tad Schroeder. Golf, Dennon West. Gymnastics, Frank A. Wells. Hockey, John P. Riley. Lacrosse, James F. Adams. Pistol, S/Maj. Herbert Roberts. Rifle, S/Maj. Alfred O'Neill. Soccer Joseph Palone. Squash and Tennis, William C. B. Cullen. Swimming, John E. Ryan, Jr. Wrestling, Leroy Alitz.

The Director of Athletics is responsible to the Superintendent for the conduct of the intercollegiate athletic program and the operation of the Army Athletic Association. The Athletic Board is charged with advising the Superintendent on matters of athletic policy. The intercollegiate athletic program is financed by the Army Athletic Association, a self-supporting and nonprofit organization consisting of approximately 12,000 graduates of the Military Academy. No Government funds are appropriated for equipment, maintenance, and operation of the vast intercollegiate athletic plant.

A total of 18 sports are included in a complex schedule that keeps nearly half of the Corps of Cadets actively engaged in competitive sports throughout the academic year. These sports are football, 150-pound football, soccer, and cross country in the fall; basketball, indoor track, wrestling, swimming, gymnastics, hockey, rifle, pistol, and squash in the winter; and baseball, lacrosse, track, tennis, and golf in the spring.

## 1966 ARMY FOOTBALL SCHEDULE

- 17 September — Kansas State at West Point  
24 September — Holy Cross at West Point  
1 October — Penn State at West Point  
8 October — Notre Dame at South Bend  
15 October — Rutgers at New Brunswick  
22 October — Pittsburgh at West Point  
29 October — Tennessee at Memphis  
5 November — George Washington at West Point  
12 November — California at Berkeley  
26 November — Navy at Philadelphia





Realizing the value of athletics to the Army, General Douglas MacArthur, who was Superintendent shortly after World War I, reorganized and strengthened the athletic system. "The training of the athletic field which," General MacArthur said, "produces in a superlative degree the attributes of fortitude, self-control, resolution, courage, mental agility and, of course, physical development, is one completely fundamental to an efficient soldiery."

Former President Dwight D. Eisenhower and Generals Omar N. Bradley and James A. Van Fleet are among the many distinguished wearers of the Army "A."

## FACILITIES

### General

The military reservation at West Point consists of 16,013 acres. The original purchase of 1,770 acres was made from Stephen Moore in 1790; additional purchases made in 1824, 1879, 1889, 1903, 1905, and 1909 brought the acreage to 3,570.

From 1938 to 1945 the acreage was more than tripled by the acquisition of 11,401 acres to allow for the development and expansion of training facilities. On 1 December 1959 a gift of 1,040 acres by Mr. and Mrs. Gene Leone increased the holdings to the present total.

Of this total, 2,520 acres are the Post proper; they comprise the area lying south of Storm King Mountain between the old Storm King Highway and the Hudson River. Access to the Post proper is by three gates: the Thayer Gate (South Gate), from Highland Falls; the Lee Gate (North Gate), from the old Storm King Highway (Route NY 218); and the Washington Gate (West Gate), from the new Storm King Highway (Route US 9W).

The expansion since 1938 has been toward the west almost as far as Central Valley, N.Y., and toward the south almost as far as Route US 6. Route NY 293 runs from southwest to northeast on about the midline of the entire reservation.

### Buildings

**ADMINISTRATION BUILDING (1909).** Designed by Cram, Goodhue, and Ferguson in Gothic style. It is located on Thayer Road and contains the offices of the Superintendent, the Dean, the Academic Board, the General Staff, the Director of Admissions and Registrar, the office of the cadet hostess, and the Information Office. The USMA Archives also occupy a portion of the building.

**BARTLETT HALL (1913, 1938).** Formerly the East Academic Building, it is named in memory of Col. William H. C. Bartlett, Professor of Natural and Experimental Philosophy, 1836–1871. The original building, 1913, was designed by Cram, Goodhue, and Ferguson; the east wing, 1938, by Paul Philippe Cret. Both are in Gothic style. Located between Thayer and Cullum Roads, north of the Administration Building. In addition to classrooms and laboratories it contains the offices of the Departments of Electricity, Mechanics, and Physics and Chemistry.

**CADET CHAPEL (1910).** Designed by Cram, Goodhue, and Ferguson in Gothic style. Located west of, and 300 feet above, the cadet barracks, it dominates the Post proper. The stained glass window over the altar has 27 panels, each depicting a militant Biblical character. The window at the entrance pictures The Revelation of St. John the Divine; it shows also the designs of the Medal of Honor and the Distinguished Service Cross. The windows in the nave are gifts of the several classes; the flags hanging in the nave were used in the War of 1812, the Mexican, Civil, and Spanish-American Wars. The Chapel Organ is the largest church organ in the Western Hemisphere, and contains over 14,000 pipes. The seating capacity is 1,500.

**CENTRAL BARRACKS (1851, 1882, 1921).** The designers of the 1851 and 1882 sections are not known, although it is likely that Maj. Richard Delafield had much to do with the design of the 1851 section and a Board of Engineers with the 1882 section. Capt. A. B. Proctor, Quartermaster Corps, designed the 1921 section. All are in Tudor style. The three sections form the three sides of a rectangle of which the East Barracks, located at Thayer and Jefferson Roads, forms the fourth side. The headquarters of the Commandant of Cadets is in a wing at the eastern end of the south section.

**CHAPEL OF THE MOST HOLY TRINITY (1900).** Designed by Heins and La Farge in Gothic style. Located at Mills and Washington Roads, on a sharp rise of ground, this Roman Catholic Chapel is a copy of the St. Ethelreda Carthusian abbey parish church in County Essex, England. The Chapel, expanded in 1958 according to plans prepared by architect Alfred Reinhardt, now has a seating capacity of 550.

**CULLUM MEMORIAL HALL (1899).** Designed by McKim, Mead, and White in Greco-Roman style. Located on the east side of Cullum Road, across from Doubleday Field, and named after Major General George W. Cullum, USMA 1833, Superintendent 1864-1866, who gave it to house trophies of war and "statues, busts, mural tablets, and portraits of distinguished deceased officers and graduates of the Military Academy."

**EAST BARRACKS (1895).** Formerly the West Academic Building, located on Thayer Road opposite Bartlett Hall, designed by Richard M. Hunt in Gothic style. It was converted to cadet barracks in 1958-1959.

**FIELD HOUSE (1939).** Designed by Paul Philippe Cret. Located on Tower Road southwest of the West Shore Railroad. Used for indoor athletics.

FIRST CLASS CLUB OR THE COMPOUND (1837). Benton, Benet, Crozier Halls, formerly known as the Ordnance Compound, named for Colonel James G. Benton, USMA 1842, first Professor of Ordnance and Gunnery; for Major General Stephen Vincent Benet, USMA 1849, the second Professor of Ordnance and Gunnery; and for Major General William Crozier, USMA 1876, a Chief of Ordnance, serves as an activity center for First Classmen and their guests.

GRANT HALL (1931). A wing of the South Barracks on Thayer Road directly across from the Administration Building. It is the cadet reception hall.

GYMNASIUM (1910, 1933, 1937, 1947). The East Gymnasium (1910) was designed by Cram, Goodhue, and Ferguson; the North Gymnasium (1933) by the Quartermaster Corps; the West Gymnasium (1937) by Paul Philippe Cret; and the Central Gymnasium (1947) by Delano and Aldrich. All are in Gothic style. The gymnasium buildings are west of the Superintendent's quarters and north of New North Barracks.

HOSPITAL (1923, 1934, 1960). New buildings were constructed in 1923, William Gehron, architect, and in 1934, York and Sawyer architects; extensive alterations were done in 1960. Located on the west side of Thayer Road, south of New South Barracks.

LAUNDRY (1956). Designed by John and Drew Ebersson; located in the north portion of Post off Washington Road near Washington Gate.

LIBRARY (1964). Designed by Gehron and Seltzer of New York in granite-faced Gothic style. Located at Jefferson and Cullum Roads on the former site of the old Library which had outlived its usefulness. The new building will accommodate 500,000 books, reading rooms, seminar rooms, microfilm and audio-visual facilities, as well as space for military and rare book collections.

MICHIE STADIUM (1924, 1963). The football stadium between Delafield and Mills Road, west of the reservoir, designed in 1924 by the Osborn Engineering Co., and in 1963 by Roberts and Schaefer Co., Inc. Named for 1st Lt. Dennis Mahan Michie, USMA 1892, Captain of the first West Point football team, killed in action at San Juan, Cuba in 1898. The seating capacity is 29,425.

SUPERINTENDENT'S QUARTERS (1820). Architect unknown. Designed in Colonial style, and located on Jefferson Road. Col. Sylvanus Thayer was the first Superintendent to live there. Directly to the north are the Commandant's Quarters at the southwest corner of Parke and Washington Roads.



**NEW NORTH BARRACKS** (1939). Designed by Paul Philippe Cret in Gothic style. Located south of the gymnasium and west of North Barracks. Sometimes called West Barracks.

**NEW SOUTH BARRACKS** (1961). Designed by O'Connor and Kilham, in Gothic style. The new barracks, consisting of two buildings, are located on the site formerly occupied by the north wing of the Hospital and were completed in July 1962.

**NON-COMMISSIONED OFFICERS' MESS** (1958). Located in the north portion of the Post off Washington Road, it was designed by Greenberg and Ames.

**NORTH BARRACKS** (1908). Designed by Cram, Goodhue, and Ferguson in Gothic style. Located at Jefferson Road and Scott Place. The chaplain's office is on the ground floor in the southeast corner.

**OLD CADET CHAPEL** (1837). Architect unknown. Designed in Greco-Roman style. It was located originally where Bartlett Hall now stands; in 1911 it was moved to its present site at the entrance to the cemetery. The American artist, Robert W. Weir, professor of drawing at the Academy from 1834 to 1876, painted the mural, entitled "War and Peace," on the wall behind the altar. The chapel is used now for funeral services, and for Jewish religious services. The seating capacity is about 450.

**ORDNANCE AUTOMOTIVE LABORATORY** (1939). Designed by Paul Philippe Cret in Gothic style. Located on Howard Road.

**POST CHAPEL** (1944). Constructed from a standard design used during World War II for chapels erected on military reservations. Located between Merritt Road and Biddle Loop. The seating capacity is about 325.

**POWER HOUSE** (1909, 1945, 1947). The original building was designed by Cram, Goodhue, and Ferguson in Gothic style; the alterations of 1945 and 1947 were done by the Engineer Corps. Located just south of Thayer Hall on Cullum Road.

**SMITH RINK** (1931). The indoor ice-skating rink, located on the east side of Mills Road south of the reservoir. It is named after Maj. Gen. William R. Smith, USMA 1892, Superintendent 1928-1932.

**SOUTH BARRACKS** (1931). Designed by William Gehron in Gothic style. Located at the southwest corner of Thayer and Brewerton Roads.

**THAYER HALL** (1958). This is an entirely new structure, built within the walls of the old Riding Hall. The building, designed by Gehron and Seltzer of New York, is of structural steel framing with reinforced concrete, completely air conditioned, and practically windowless. Besides administrative space for the Departments of English, For-

eign Languages, Law, Mathematics, Military Art and Engineering, Military Psychology and Leadership, Ordnance, and Social Sciences; it includes 98 classrooms, the Academic Computer Center, educational TV studio, two 200-seat map-problem rooms, an 800-seat auditorium, a 1,500-seat auditorium, a materials testing laboratory, and space on the first and second floors for the Museum which was formerly in the Administration Building. Roof parking for 200 automobiles also has been provided.

UNITED STATES HOTEL THAYER (1926, 1948). Designed by Caugey and Evans in Tudor style. Located on the east side of Thayer Road just north of the Thayer Gate. It is owned by the Government. Including the addition completed in 1948, there are accommodations for 500 guests.

UTILITIES BUILDING (1935). Designed by the Quartermaster Corps in Tudor style. Located at Ruger and Tower Roads. It contains the Post Exchange and the Commissary; and the offices of the Engineer, the Quartermaster, and the Transportation Officer.

WASHINGTON HALL (1929). Designed by William Gehron in Gothic style. Located on Jefferson Road between Central Barracks and North Barracks. It is the Cadet Dining Hall, and has a seating capacity of 2,500. The offices and drafting rooms of the Department of Earth, Space, and Graphic Sciences are on the fifth floor.

WEST POINT ARMY MESS (1903, 1963). The official name of the Officers' Club. Designed by McKim, Mead, and White in Classic style. Located on Cullum Road, south of Cullum Hall.

## Monuments

AIR CADET MEMORIAL (1944). Located on Mills Road at the north end of Lusk Reservoir. Erected by members of the Classes of '43, '44, and '45 to the memory of Air Cadets of the Academy who lost their lives while undergoing flying training.

BATTLE MONUMENT (1897). Designed by Stanford White, executed by Frederick MacMonnies. Located at Trophy Point at the northern limit of the Plain, and a little to the west of Washington Monument. It is dedicated to the memory of soldiers and officers of the Regular Army killed in action in the Civil War.

CLASS OF 1915 DRINKING FOUNTAIN (1957). Located at the corner of Thayer and Jefferson Roads.

CLASS OF 1936 DRINKING FOUNTAIN (1965). Located on the north side of Cadet Chapel adjacent to DeRussy Road.

FRENCH CADET MONUMENT (1919). Presented by the cadets of L'Ecole Polytechnique. Temporarily in storage due to construction work.



Patton Monument



KELLEHER-JOBES MEMORIAL ARCH (1939). Located at the north entrance to Flirtation Walk; erected by the Class of 1941 in memory of two outstanding athletes, Cadets William P. Kelleher and Charles S. Jobs, who died during their Third Class year.

KOSCIUSZKO MONUMENT (1828). Designed by John H. Latrobe, USMA 1822. Located to the north of Fort Clinton. Given by the Corps of Cadets in honor of Col. Thaddeus Kosciuszko, who helped plan the fortifications at West Point during the Revolutionary War.

PATTON MONUMENT (1950). Dedicated to the memory of Gen. George Smith Patton, Jr., USMA 1909, and presented by the officers and men of the units he commanded. Located across Jefferson Road from the Library.

ROBINSON MEMORIAL (1940). Located on Mills Road, west of gymnasium, in memory of Col. Wirt Robinson, Professor of Chemistry, Mineralogy, and Geology.

SEDGWICK MONUMENT (1868). Dedicated to the memory of Maj. Gen. John Sedgwick, USMA 1837, killed at Spotsylvania, 1864. Made from cannon captured by his corps, it is located at the northwest corner of The Parade.

SHERIDAN MEMORIAL (1932). Located on Flirtation Walk, in a small cove northwest of Gee's Point. Erected by the Corps of Cadets in honor of Cadet Richard Brinsley Sheridan, Jr., who was fatally injured on the gridiron of Yale Bowl, 24 October 1931.

THAYER MONUMENT (1883). Dedicated to Col. Sylvanus Thayer, the "Father of the Military Academy." Located in the Trophy Point area.

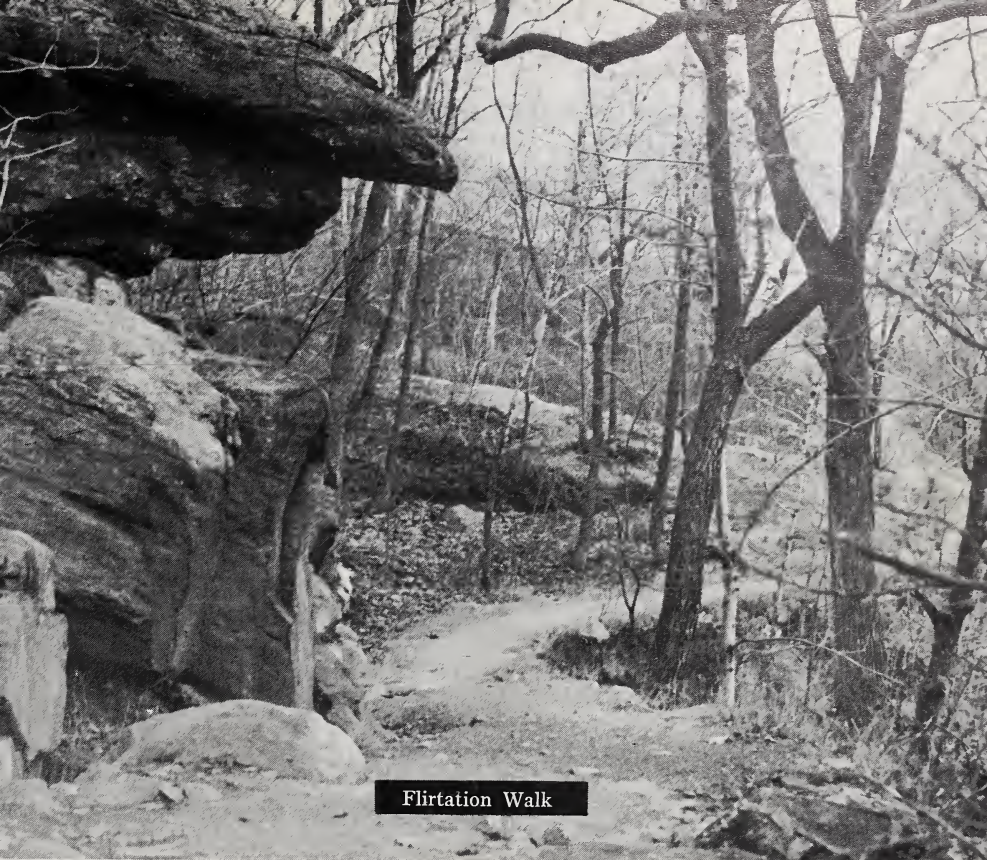
WASHINGTON MONUMENT (1916). Located in the circle at the corner of Cullum and Thayer Roads. It is a replica of the Washington Monument in Union Square, New York City.

## Grounds

CAMP BUCKNER (1945). The summer training camp for the Third Class, located on the reservation five miles southwest of the Post proper, and known formerly as Camp Popolopen. Renamed in honor of Lt. Gen. Simon Bolivar Buckner, USMA 1908, killed at Okinawa in 1945.

CEMETERY (1816). Located at Washington and Ruger Roads. Among others, it contains the graves of Margaret Corbin, Revolutionary War heroine, and of Generals Scott, Custer, and Goethals.

CLINTON FIELD. Located immediately north of Doubleday Field and west of Fort Clinton. The name of the field derives from the Fort,



Flirtation Walk

named for a Revolutionary War general. Clinton Field was the site of the cadets' summer encampment from 1819 to 1942. It is used now for soccer, football, and lacrosse.

**CONSTITUTION ISLAND.** Donated to West Point in 1909 by Mrs. Russell Sage and Miss Anna B. Warner. About 280 acres, it is located opposite the north area of the Post proper. One end of the Great Chain, stretched across the Hudson to obstruct British navigation of the river during the Revolutionary War, was anchored in Martelaer's Rock, at the western point of the island.

**DELAFIELD POND.** The outdoor swimming pool, located on Delafield Road. Named after Maj. Gen. Richard Delafield, USMA 1818, Superintendent, 1838–1845 and 1856–1861.

**DOUBLEDAY FIELD (1939).** Baseball field, located between Thayer and Cullum Roads, east of The Parade. Named in honor of Maj. Gen. Abner Doubleday, USMA 1842, who is said to have laid out the first modern baseball diamond at Cooperstown, N.Y., in 1839.

**FLIRTATION WALK.** A foot trail extending three-quarters of a mile along the river from Cullum Road to Battle Monument and open only to cadets and their guests. It is probable that the early Chain Battery Walk is now included in Flirtation Walk.

**FORT CLINTON (1778).** Designed and begun by Lt. Col. Louis de la Radiere and completed by Col. Thaddeus Kosciuszko. Located at Cullum Road and Clinton Place. Originally called Fort Arnold, but after Arnold's treason in 1780 was renamed Fort Clinton, after Gen. George Clinton.

**FORT PUTNAM (1778; partly restored, 1907-1910).** Designed by Col. Thaddeus Kosciuszko and built by troops of Gen. Rufus Putnam. It is located on Mount Independence, 451 feet above tidewater, and is reached by foot trail from Mills Road.

**GREAT CHAIN.** The chain stretched across the Hudson from just north of Gee's Point to Martelaer's Rock on Constitution Island to obstruct navigation of the river by the British during the Revolutionary War. It was fastened in place on 11 April 1781. A number of the links are at Trophy Point.

**HOWZE FIELD.** Located directly south of Michie Stadium, and bounded by Mills Road on the east, by Howze Place on the south, and by Delafield Road on the west. A large recreation field, it was named in honor of Maj. Gen. Robert Lee Howze, USMA 1888, Commandant of Cadets, 1905-1909.

**LUSK RESERVOIR (1898).** One of the water supply reservoirs for West Point. It is located on Mills Road directly across from Michie Stadium, and has a capacity of 89,000,000 gallons.

**THE PARADE.** The drill and parade field, bounded by Jefferson Road on the south and west, by Thayer Road on the east, and Washington Road on the north.

**THE PLAIN.** That portion of the ground embracing The Parade, Clinton Field, and Doubleday Field.

**SHEA STADIUM (1958).** Track and field stadium, located northwest of the Field House. Named for Lt. Richard Thomas Shea, Jr., USMA 1952, captain of the 1952 track and field team, star athlete and record holder, killed in Korea in 1953 and posthumously awarded the Medal of Honor.

**STILWELL DAM AND STILWELL LAKE (1949).** Located on the reservation about four miles southwest of the Post proper. Named in honor of Gen. Joseph Warren Stilwell, USMA 1904, Commanding General

U.S. Forces China-Burma-India 1942-1944, and Commanding General U.S. Tenth Army 1945.

TROPHY POINT. A small plot of ground located north of The Parade where are grouped many trophies captured in war by American forces. Several links of the Great Chain are there.



## THE WEST POINT MUSEUM

*Director:* Mr. Richard E. Kuehne, B.A.

*Curator of History:* Mr. Gerald C. Stowe, B.S.

*Curator of History:* (Vacant)

*Curator of Design:* Mr. Ray W. Moniz, B.F.A.

*Assistant Curator of Design:* Mr. James H. Kinsley, Jr.

The West Point Museum is located in Thayer Hall, occupying the first and second floors of the southwest portion of this academic building. Its galleries and special displays are open without charge to the public throughout the year, every day of the week, from 10:30 a.m. to 4:30 p.m. The Museum is closed only on Christmas and New Year's Day.

Adjacent to the public galleries are the storage and research rooms maintained by the Museum to carry out its primary duty as a college museum by supporting the academic and military education of cadets of the Military Academy. To this end it maintains a continuous series of changing exhibits in cadet areas, arranges lectures and demonstrations, and opens its collections for loans to instructors and cadets. To this end also it maintains a considerable display of portraits and paintings, battle flags and other exhibits in various buildings on the post. Some of these paintings and flags can be seen by the public in the Library, the Cadet Chapel, and in Grant Hall.

The West Point Museum was established in 1854 but its collections actually date back to 1777. After the Battle of Saratoga in October of that year, much of the ordnance captured from the British was sent to West Point. A little later, part of the famous Great Chain stretched across the Hudson at West Point to bar navigation of the river to British men-of-war was stored here.

Throughout the first half of the 19th century the custom of sending trophies of war and objects of national historic interest to the Military Academy was maintained. In 1843, for example, the Secretary of the Treasury presented West Point with a brass culverin 6 pounder that had been given to the Continental Congress by Lafayette. After the close of the Mexican War in 1847, Gen. Winfield Scott sent large numbers of captured flags, cannon, and other war trophies to the Military Academy.

In 1848, the Secretary of War formally directed in the name of the President that West Point be the "depository of the trophies of the successful victory of our arms in Mexico." The authorities realized that



permanent provision was needed for the ever-growing collections, and in 1854 they officially created the Ordnance and Artillery Museum, and established it on the third floor of the Academy, a building erected in 1838 on the site of the present East Cadet Barracks. Custodianship of relics, however, was not the new museum's only mission; for most of the next century it served as the laboratory for cadet instruction under the Department of Ordnance.

In 1909 the Museum was moved to the Administration Building where it remained until 1958. It was removed from the Department of Ordnance in 1948 and placed on an independent status. A full-time director was appointed in 1949 and given a professional staff.

The West Point Museum has probably the largest collection of military items in the Western Hemisphere. Unlike most military museums the story it tells is not confined to a national scene. One gallery is devoted to the development of military institutions and the art of war from the days of the Romans until the present; while others deal with ordnance, logistics, medals and decorations and kindred aspects of the military history of the Western World. The visitor is introduced to the important developments in tactics, to the Great Captains of History, and to the everyday life of the soldier. He is given to understand something of the impact on warfare of such historic events as the Industrial Revolution and nuclear fission.

The visitor's understanding of such matters is heightened by an extensive use of dioramas and full scale models. The visitor can, for example, stand behind a palisade of the days of the Indian Wars in America, or walk through a portion of a World War I trench. He can view episodes in important battles from Cynoscephalae in the year 197 B.C. to Gettysburg of 1863. In keeping with developments in other American museums, the West Point Museum has endeavored to fulfill its historical mission by treating, in part at least, with intangible cultural concepts and movements as well as with tangible objects.

# ADMISSIONS

## General

In one major respect the requirements for admission to the Military Academy differ from those of a civilian college or university. A young man who desires to enter the Academy must first obtain from an authorized source permission to be examined for appointment to the Military Academy. Receipt of this permission is called a nomination. Having received a nomination, a candidate must undergo examinations to determine his academic, medical, and physical aptitude qualifications. If determined fully qualified in these three areas by the Military Academy Academic Board, the candidate is then authorized to receive a Cadetship. Selection (appointment) of those fully qualified candidates to fill cadetships for the class of 1971 is dependent on the type of nomination(s) the candidate holds and the number of vacancies to be filled.

It is important that prospective candidates make their interest in attending the Military Academy known to appropriate nominating sources as early as possible. The spring of the junior year in secondary school is ideal; however, most nominating sources will consider later requests.

## Requirements

In order for a young man to be eligible for appointment to the Military Academy, he must meet the following requirements:

*Age.* On 1 July of the year he is to be admitted a candidate must have attained the age of 17 years and must not have reached the age of 22.

*Citizenship.* A candidate must be a citizen of the United States at the time of entry. (Foreign students nominated by mutual agreement between the United States and the countries concerned are exempt from this requirement.)

*Marital Status.* A candidate must never have been married. A cadet may not marry until he has graduated from the Academy.

*Character.* Each candidate's record must show positive evidence that he is responsible, trustworthy, emotionally stable, and of good moral character.

*Motivation.* A candidate must have a strong desire to become a cadet and pursue a military career. Experience has indicated that lack of motivation frequently results in failure to remain at the Academy.

*Potential Leadership.* Each candidate's record must include information concerning the effectiveness of his personality and the extent to which he has participated in school and community affairs.

*Physical Condition.* A candidate must be physically fit. He must successfully undergo qualifying medical and physical aptitude examination before he may be appointed.

*Scholastic.* A candidate's secondary school academic record, to include his performance on specified College Entrance Examining Board Tests, must show adequate preparation and indicate he has the potential to succeed in the academic curriculum at the Military Academy. Details are discussed in the following sections.



## PREPARATION

### ACADEMIC

#### General

The kind and amount of preparation a candidate brings to the Academy are of vital importance to his successful pursuit of the academic courses at West Point. Once the academic year begins, the pace is rapid and basic knowledge of fundamental secondary-school subjects is assumed. A well-prepared cadet, therefore, finds himself in an enviable position.

The large majority of candidates admitted to the Military Academy enter directly from secondary schools. Those who have graduated in the top portion of their high-school classes and have attained good grades in their mathematics and English courses should be able to qualify academically for admission. Experience has shown that in order to pursue successfully the academic courses at the Military Academy, it is essential that a candidate should have completed 4 years of English, at least 3 years of mathematics but preferably 4, 2 years of a foreign language, a year of laboratory science, and a year of United States History. The candidate's scholastic record must show adequate preparation in these respects in order for him to qualify for admission. Furthermore, his preparation should include additional courses in the mathematical sciences and the humanities. In addition, candidates are encouraged to submit for validation consideration College Entrance Examination Board Advanced Placement Test results.

Candidates unable to obtain appointments for admission to the Military Academy immediately following graduation from secondary school are encouraged to attend a civilian college or university pending receipt of an appointment to West Point. The undergraduate courses taken by the candidate should be substantial ones which will further prepare him for the rapid pace and high standards of academic accomplishment that are required at West Point.

For the guidance of prospective candidates and their counselors the recommended preparation in English, mathematics, foreign languages, sciences, and United States History is shown in the following paragraphs.

## English

### *Composition*

Grammar, spelling, and punctuation.

Types of paragraphs and methods of developing paragraphs.

Organization of themes.

The techniques of summarizing.

Methods of research and use of the library.

Practice in speechmaking.

### *Literature*

Ability to read with reasonable speed and good comprehension.

Familiarity with major patterns of writing, such as the essay, the drama, the short story, and the novel.

Some acquaintance with poetic forms, such as epic, narrative, dramatic monologue, ode, and sonnet.

Some familiarity with meter, stanza forms, and figures of speech.

Acquaintance with several plays of Shakespeare.

Some knowledge of representative English and American writers.

## Mathematics

### *General*

In order to succeed in mathematics at USMA, it is essential that the candidate have completed at least 3 years of college preparatory mathematics to include algebra, geometry, and trigonometry as outlined below. A candidate's scholastic record will not be considered qualifying for admission if it is deficient in any of the foregoing respects. It is especially important that the USMA applicant be studying mathematics in the year of school immediately preceding his intended enrollment at West Point, as this will facilitate his rapid adjustment to the demanding requirements at the Academy. A fourth year of college-preparatory mathematics is urged for all who have the opportunity for such instruction in their precollege academic training. Moreover a fourth year is *essential* for those who wish to study mathematics at West Point beyond the minimum required for graduation: see page 67 for comments pertaining to the Advanced Studies Program.

The necessary scope of preparation in algebra, geometry, and trigonometry is given in the following sections:



## *Algebra*

Emphasis in this area is placed on the following qualifications: (1) firm grounding in basic concepts and definitions; (2) a facility with basic techniques; and (3) the ability to apply logical analysis to the solution of problems. The candidate should be prepared in the following:

- Applications of the fundamental operations.
- Special products and factors.
- Operations with fractions.
- Radicals; fractional and negative exponents.
- Systems of linear and quadratic equations.
- Rectangular coordinates; the graphing of linear and quadratic equations in one and two variables.
- Ratio, proportion, variation.
- Common logarithms and applications.
- Progressions, arithmetic and geometric.
- The binomial theorem; the binomial formula with fractional and negative exponents.
- Mathematical induction.
- Elementary numerical trigonometry.

## *Geometry*

As with algebra, careful preparation in the fundamentals of plane geometry and selected topics from solid geometry is necessary. The candidate should possess: (1) a knowledge of the basic concepts, definitions, and theorems of plane geometry; (2) an acceptable understanding of the nature of direct and indirect proof, and a facility with careful deductive reasoning as evidenced by his ability to prove standard theorems; (3) familiarity with the geometric properties of common plane figures; (4) a knowledge of spatial relationships, particularly those pertaining to lines and planes in space; and (5) familiarity with the definitions and geometrical properties of prisms, pyramids, cylinders, cones and spheres. The candidate should be prepared in the following:

- Congruency theorems, and related theorems on triangles.
- Inequalities of lines and angles.
- Parallel and perpendicular lines.
- Properties of quadrilaterals.
- Circles: chords, central angles, arcs, tangents, secants.
- Concurrent lines.



Similar triangles.  
Areas of polygons.  
Constructions.  
The area of a circle as a limit.  
Relations of lines and planes in space.  
Definitions and properties of prisms, pyramids, cylinders, cones and spheres.

### *Trigonometry*

In this subject the following qualifications are emphasized: (1) a knowledge of the concept of function and precise definitions of trigonometric functions of any angle; (2) thorough familiarity with the basic trigonometric identities; and (3) ability to apply logical analysis to the solution of problems. The candidate should be prepared in the following:

Angles and their measure, standard position.  
Trigonometric functions of angles and real numbers.  
The Unit Circle.  
Graphs of functions in rectangular and polar coordinates.  
Applications of logarithms to trigonometry.  
Fundamental identities, trigonometric equations.  
Double and half-angle formulas.  
Product, sum and difference formulas, and applications.  
Solutions of oblique triangles, law of cosines and law of sines.  
DeMoivre's Theorem, complex numbers.

### *Advanced Programs*

The Military Academy offers advanced programs in mathematics during the first two years, including from 2.5 to 10.0 credit hours of mathematics in extra (advanced) courses beyond those required as standard for graduation from USMA. These courses are offered initially to selected cadets whose pre-USMA academic record shows: (1) high quality of performance in the standard preparation outlined above in algebra, geometry and trigonometry; (2) not less than 4 years of college-preparatory mathematics including elementary plane analytic geometry; (3) active study of mathematics during the final year before entering the Military Academy. If a cadet meets these requirements and is assigned to an advanced program, he must also achieve high standing in mathematics during his early months at West Point in order to remain in the program. A candidate aspiring to such

a program is urged to take the Level II rather than the Level I Mathematics achievement test of the College Board.

## Foreign Languages

### *Preparation*

Two or three years of high-school study of any foreign language will normally prove to be a helpful background for any of the languages taught at West Point. Those interested in taking one of the advanced language courses would do well to take 3 or 4 years of the same language (French, German, or Spanish) before entering the Academy. For those interested in studying Portuguese, previous courses in Latin and/or Spanish are advisable. For those desiring to study Russian, courses in either Latin or German, or preferably both, are recommended. (If previous Russian study is possible, it would, of course, provide the best preparation.) Regardless of the language studied, applicants should concentrate on the basic organization of the language, including word forms and functions and sentence structure; on basic vocabulary, to include the common idiomatic expressions; and on accurate pronunciation and proper intonation in word groups and sentences. Courses offering extensive practice in speaking and aural comprehension, without ignoring the fundamentals of the language, should provide excellent preparation for the courses at the Military Academy.

### *Standard Program*

Standard courses in five modern languages are offered at West Point: French, German, Portuguese, Russian, and Spanish. Each cadet studies one of these languages during his first 2 years at the Academy. Cadets are normally assigned to study the language of their choice; but it is sometimes necessary to assign a cadet to the language of second choice, in cases where quotas are oversubscribed.

### *Advanced Program*

Accelerated and Advanced courses are conducted (during the same time and in lieu of the standard courses) in French, German, and Spanish, for those who qualify in a special placement examination consisting of several written parts, a dictation, an aural comprehension test, a passage to be read aloud, and oral replies to a number of simple questions in the language. Advanced courses may be conducted in Portuguese and Russian provided a sufficient number of cadets qualify therefor. A minimum of 2 years of high-school

study of the language or 1 year of college study is the prerequisite for consideration for the advanced course. Cadets who have completed 2 years of high-school study but who fail to qualify for the advanced course may normally take the accelerated (intermediate) course in the same language.

## **Science**

Preparation should include, as a minimum, a standard secondary-school course (including laboratory) in general science, physics, or chemistry. Experience has indicated the desirability of including all three courses in secondary-school preparation.

## **United States History**

The candidate should know the facts and understand the chronological and other relationships concerning the major developments in American History, to include:

Settlement and growth of the English Colonies.

The American Revolution.

Growth of American democratic institutions.

Expansion of the United States.

The Civil War.

Economic development of the United States.

Growth of American social and cultural patterns.

International Relations.

## **Physical Conditioning**

Because of the nature of the new cadets' training during their first 2 months at West Point, physical demands upon them are necessarily great. Experience indicates that those cadets who, prior to admission, have conditioned themselves physically are best able to meet the training requirements. The candidate should strive for the degree of conditioning required for vigorous team sports. He is advised to practice heavy physical conditioning exercises (such as pull-ups, sit-ups, and push-ups) until many repetitions of the exercises can be performed without severe physical strain. In addition, he should strengthen his legs and wind by regular cross country running and by fast climbing on steep slopes. A program of vigorous competitive sports should be followed, with emphasis on variety of sports rather than on one favorite activity. Any candidate in doubt about his physical-conditioning methods would be well-advised to consult a high school or college physical education department.

# NOMINATION

## General

Each cadetship at the Military Academy is allocated to a specified Member of Congress, to the Governor (or Commissioner) of a U.S. Territory, or to the Secretary of the Army. When a cadetship becomes vacant, due to graduation or other causes, the authority to whom the vacancy is allocated transmits to the Department of the Army the names of up to six young men he nominates to fill the vacancy. He further indicates the method to be used by the Military Academy in selecting the candidate to be appointed to the cadetship.

## Congressional Nominations

Cadetships allocated to Members of Congress and Commissioners or Governors are termed CONGRESSIONAL and are listed below:

Vice President .....	5
100 Senators (5 each) .....	500
435 Representatives (5 each) .....	2175
District of Columbia Commissioners .....	5
Canal Zone Governor .....	1
Puerto Rico Resident Commissioner/Governor .....	6
Guam, Virgin Islands, American Samoa Governors .....	1
Total	2693

The law requires that candidates nominated from the states at large, from congressional districts, from the District of Columbia, from the Canal Zone, and from Puerto Rico, be domiciled in the geographical unit from which nominated.

The Vice President nominates from the United States at large. United States Senators and Representatives-at-Large nominate from their respective states at large. U.S. Representatives, other than those at large, nominate from their districts. The Commissioners of the District of Columbia nominate from among the residents of the District. The Governor of the Canal Zone nominates from among the sons of civilians residing in the Canal Zone, and from among sons of civilian personnel of the U.S. Government and the Panama Canal Company residing in the Republic of Panama. The Governor of Puerto Rico must nominate a native of Puerto Rico to fill his single cadetship. The Resident Commissioner nominates from among residents domiciled in Puerto Rico to fill the five cadetships allocated to him. The Governors of Guam, of the

Virgin Islands and of American Samoa nominate from among the sons of U.S. citizens or nationals residing on their respective Islands.

As most Congressional sources conduct preliminary screening interviews and tests before selecting their nominees, it is important that each young man interested in entering the Military Academy apply for consideration to his authorized nominating sources at least one year prior to the time he expects to enter the Academy (July).

Congressional nominating authorities specify to the Department of the Army, the method to be used in making the final selection of the candidate to fill the vacant cadetship. The most common methods are described below:

*Competitive Method.* Members of Congress, when making their nominations for each vacancy, authorize the Academic Board, USMA, to select the best qualified of their nominees. Such nominees are termed "Congressional Competitors."

*Principal-Alternate Method.* Members of Congress using this method may nominate six candidates, one being named as principal, one as first alternate, one as second alternate, one as third alternate, one as fourth alternate, and one as fifth alternate. The first alternate, if qualified, will be admitted if the principal fails; the second alternate, if qualified, will be admitted if the principal and first alternate fail; and so on for succeeding alternates.

Army Nominations

The Secretary of the Army's allocation of cadetships, termed ARMY, is distributed to specific categories below for the class entering in July 1967.

Presidential .....	27
Members of the Regular Army .....	27
Members of the Army Reserve .....	27
Sons of Deceased Veterans .....	13
Honor Military and Honor Naval Schools .....	13
Sons of Persons Awarded the Medal of Honor .....	Unlimited

Appointments to vacancies within each of the Army categories are awarded to best qualified candidates within each category on a competitive basis. Each Army candidate, with the exception of those from the Regular Army category, must complete all required College Board examinations on or before the December 3, 1966, test administration. Failure to do so will cancel his nomination. Results of later College Board administrations (January or March 1967) will not be considered except in cases where the candidate holds one or more Congressional

Nomination(s) in addition to an Army nomination, and then only for those Congressional nominations. Regular Army nominees are authorized to submit with their records the results of January 1967 College Board tests. (See Summary—page 43.) A detailed discussion of the competitive nomination categories follows below.

#### *Presidential:*

Presidential nominations are reserved for the sons of members of the Regular components of the Army, Navy, Air Force, Marine Corps and Coast Guard, who are still in service, are retired, or are deceased. These nominations are administered in Headquarters, Department of the Army. Interested young men should make application by letter to The Adjutant General, ATTN: AGPB-M, Department of the Army, Washington, D.C., 20315, no later than 15 November 1966. An adopted son is eligible if he was adopted prior to his 15th birthday: a copy of the order of court decreeing adoption, duly certified by the clerk of the court, must accompany the application. Letters requesting nomination should include the following:

Name, address, and date of birth of applicant.

Name, Grade, Service Number, Component and Branch of Service of the parent.

Retired or Deceased (furnish date and copy of retirement orders or casualty report).

Enlisted Men—Attach statement prepared by personnel officer listing date of enlistment, date of expiration of enlistment, component and branch of service.

#### *Regular Army:*

Nomination of candidates to fill the 27 annual vacancies held for members of the Regular Army is outlined in detail in AR 350-55. This publication may be obtained from the nearest Army installation; by writing to Headquarters, Department of the Army, ATTN: AGPB-M, Washington, D.C., 20315; or by writing to The Director of Admissions and Registrar, West Point, N.Y., 10996. All Regular Army nominees are required to attend the USMA Preparatory School at Fort Belvoir, Virginia, during the year prior to entering the Military Academy (Appendix E).

#### *Army Reserve:*

Nominations to fill the 27 annual vacancies held for members of the Reserve Components are outlined in detail in AR 350-55. This publication may be obtained from the nearest Army installation; by writing to



Headquarters, Department of the Army, ATTN: AGPB-M, Washington, D.C. 20315; or by writing to the Director of Admissions and Registrar, West Point, N.Y. 10996.

*Sons of Deceased Veterans of World War I or II or the Korean War:*

Forty (40) cadetships are provided for the sons of members of the Armed Forces of the United States who were killed in action or who died of wounds, injuries, or disease resulting from active service during World War I or II or between June 27, 1950 and midnight of January 31, 1955. The Veterans Administration determines the eligibility of all applicants, and its decisions are final and binding on the Department of the Army. Application should be made by letter (no form is prescribed) addressed to The Adjutant General, ATTN: AGPB-M, Headquarters, Department of the Army, Washington, D.C. 20315. Application must be made prior to 15 November 1966. The letter of application should state the full name, date of birth, and address of the applicant (complete service address should be given if the applicant is in the Armed Forces); and the name, grade, service number, and last organization of the veteran parent, together with a brief statement concerning the time, place, and cause of death. The claim number assigned to the veteran parent's case by the Veterans Administration should also be furnished.

*Honor Military and Honor Naval Schools:*

Thirteen (13) cadetships are provided annually for graduates of Honor Military and Honor Naval schools. Each such school, designated as an honor school by annual Department of the Army and Department of the Navy inspections, is invited to nominate three candidates annually from among its honor graduates. The thirteen cadetships will be filled by selecting the thirteen best qualified candidates regardless of the school from which nominated. The candidates need not be members of the graduating class of the current year, but in each instance the head of the school must certify that the candidate (1) has been a member of the ROTC unit at least two years; (2) has been, or is to be graduated within the upper third of his class; (3) has demonstrated in his academic, extracurricular, and ROTC activities that he possesses outstanding qualities of leadership, character and aptitude for the Military Service; (4) has shown proficiency in not less than 15 units in subjects prescribed for admission to the Military Academy; and (5) has met all other requirements of law and regulations prescribed for admission to the Military Academy. Honor School nominations must be received by

The Adjutant General, ATTN: AGPB-M, Headquarters, Department of the Army, Washington, D.C. 20315, before 15 November 1966.

### *Sons of Persons Awarded the Medal of Honor:*

Sons of recipients of the Medal of Honor may be nominated and appointed to the Military Academy. The administration of these nominations is in the Department of the Army. Application by those eligible should be made by letter (no form is prescribed) to The Adjutant General, ATTN: AGPB-M, Headquarters, Department of the Army, Washington, D.C. 20315. The letter should contain the applicant's full name, address, and date of birth (complete service address should be given if the applicant is in the Armed Forces); the name, grade, and branch of service of the parent; and a brief statement of the date and circumstances of the award. Candidates within this category of nomination must qualify in the same manner as a Congressional principal candidate. (See qualification section.) There is no annual limitation upon this category and all candidates who are found fully qualified will be admitted as cadets.

### **Allied Cadets**

Young men from the allied countries listed below may be designated by their governments to take the entrance examinations and, if qualified, be authorized to receive instruction at the Military Academy. No Physical Aptitude Test is required. Applications must be submitted to the United States Government by the government concerned. Requirements for the admission, advancement from class to class, and graduation of allied cadets are the same as those for cadets of the United States. While a cadet, they receive the same pay and allowances as cadets appointed from the United States. They are not entitled, however, by reason of their graduation, to appointment in the Armed Forces of the United States.

*Republic of the Philippines.* One Philippine National, from among those designated by the President of the Republic of the Philippines, selected on the basis of his academic record and College Board test scores, is authorized to enter with the new class each July.

*American Republics.* A total of not more than 20 citizens of the American Republics may receive instruction at the Military Academy at any one time. Selection will be determined in the same manner as for nominees from the Republic of the Philippines. Not more than three persons from any one country may be cadets at the same time.

*Other Allied Countries.* From time to time, citizens of other allied countries have been permitted to attend the Military Academy upon specific authorization of the United States Congress. Selection will be determined in the same manner as for nominees from the Republic of the Philippines.

### **Progress Reports on Qualifications**

In order to keep candidates informed concerning their qualification for admission, The Military Academy will issue progress reports on academic, medical, and physical aptitude qualifications, when such information is complete.

### **Early Notification of Admission**

Candidates who hold principal nominations to the Military Academy will be notified of acceptance as soon as they meet all entrance requirements. Additionally, the most outstanding among other qualified candidates may be notified early after completed evaluation and approval by the Academic Board.

CATEGORY	NOMINATION	COLLEGE BOARD EXAMINATIONS <sup>1</sup>			PHYSICAL APTITUDE EXAMINATION	MEDICAL EXAMINATIONS <sup>2</sup>
Congressional		Not Later Than			Not Later Than	AT ANY AUTHORIZED ARMY, NAVY OR AIR FORCE MEDICAL FACILITY LISTED IN 1966-1967 USMA CATALOGUE—AT ANY TIME PRIOR TO MARCH 1966—BY INDIVIDUAL ARRANGEMENT—OR AT DESIGNATED TEST SITE IN JANUARY OR MARCH 1967
	Competitor or competing alternate.....	Dec. 1966	Jan. 1967	Mar. 1967	Jan. <sup>2</sup> 1967	
	Principal-Alternate.....			X X	X X	
Army	Presidential.....	X				X
	Regular Army.....	X	X			X
	Army Reserve.....	X				X
	Sons of Deceased Veterans.....	X				X
Special	Honor Military Schools.....	X				X
	Sons of Persons Awarded Medal of Honor.....			X		X
	Allied.....			X	Not Required	

<sup>1</sup> College Board Tests required of all nominees: Scholastic Aptitude Test, English Composition, Math Level I or II.

<sup>2</sup> Candidates tested in January will have PAE results used for all nominations held at that time.

<sup>3</sup> All Candidates must take a qualifying medical examination within the year prior to admission.

**General**

The Adjutant General, Department of the Army will send to each candidate his official letter of nomination. This letter will authorize the candidate to take the academic, medical, and physical aptitude examinations required to establish qualification for appointment to the Military Academy to fill the vacancy for which nominated. The Adjutant General will include with his letter, detailed instructions as to tests required, examination dates, and the personal and scholastic data he must send, or cause to be sent, to the Military Academy.

**January and March Examining Centers**

A candidate's letter of nomination from The Adjutant General, Department of the Army, will instruct him to report to a military installation near his home for testing on Wednesday, either 11 January or 1 March 1967 (see Appendix D). There he will be given the opportunity to take the qualifying examinations required for admission to the Military Academy. Presidential, Reserves, Honor School, and Sons of Deceased Veterans nominees must, however, take the required College Board tests no later than the December test administration. The Medical and Physical Aptitude Examinations will be administered first and normally should be completed by Friday. No pre-registration for the College Board tests is necessary for candidates eligible to take the College Board tests at military installations in January or March.

During the examination period living accommodations and meals will be provided to candidates at a minimal cost. Except for active duty servicemen, travel and personal expenses will be met by the candidate.

The authority to report for testing in January or March should not deter a candidate from arranging to take his qualifying medical examination at some earlier time. It is to the candidate's advantage to do so in order that he may determine his chances for qualification as early as possible. The same consideration applies for his taking the required College Board tests. A candidate who has previously completed his medical examination and has taken, or is registered to take, the required College Board tests in his local area, should be able to return home on Thursday following the administration of the Physical Aptitude Examination.



Failure of any candidate to complete the required examinations according to the prescribed schedule will cause his nomination to be nullified. Similarly, the nomination of a Congressional principal or an alternate will be nullified unless he can establish that the reason for his failure to take the examination by 4 March 1967 was due to sickness or other unavoidable circumstance. In each such case of unavoidable absence, the principal or alternate may request of The Adjutant General permission to take the tests in June 1967, at West Point. Conflicts with academic schedules and athletic contests are not considered unavoidable and do not constitute justification for postponement of the examinations.

### June Examination at West Point

A special administration of all required examinations will be conducted at West Point in June 1967. This administration is limited to candidates nominated after the March examination period, and to principal or alternate candidates who for unavoidable causes were unable to take the March tests. During the June Examination period, meals and living accommodations will be furnished at a nominal cost; however, travel costs to and from West Point will be borne by the candidate.

### Academic Qualification

*General:* A candidate's academic qualification is determined by the military Academy's Academic Board based on the following:

1. A review of his entire scholastic record in secondary school (and college, if appropriate) to determine that he has the aptitude and demonstrated capability to succeed in the demanding curriculum required of all cadets.

2. Acceptable performance on the following College Entrance Examination Board tests:

- Scholastic Aptitude Test

- English Composition Achievement Test

- Level I or Level II Mathematics Achievement Test\*

3. Recommendations from the Principal, counselors, teachers, and other school officials in position to judge accurately the academic performance and potential of the candidate.

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\* Scores on either the Level I or Level II Mathematics achievement test will be accepted by the Military Academy. No adjustment is made on the scores because of any possible difference in the degree of difficulty of the two tests; however, an individual who has done well in three years of college-preparatory mathematics and is enrolled in a fourth year should be adequately prepared for the Level II test and should not hesitate to take it.

## Scholastic Record

Upon receipt of his letter of nomination and its accompanying materials, the candidate must complete the enclosed School and Personal History forms promptly and transmit them to the Military Academy. A secondary-school transcript, including grades for the latest completed term, should also be forwarded by the school. If a candidate is in college, a transcript covering his college work must also be forwarded to the Military Academy.

## College Board Examinations

Each candidate must submit to the Military Academy results of the College Entrance Examining Board tests for Scholastic Aptitude, English Composition, and Level I or Level II Mathematics. (See summary—page 52: “When To Take Qualifying Examinations”).

A candidate who desires to take the tests in December 1966, or in January or March 1967, is encouraged to do so in his local area.

At the time he registers for the tests, he must designate the Military Academy as an institution to receive the results.

If a candidate desires that results from tests previously taken be considered, he must contact the College Entrance Examining Board, Princeton, N.J., or Berkeley, California (as appropriate), and request that such results be sent to the Military Academy. He must enclose one dollar (\$1) with his request to cover handling and mailing costs.

It is desirable that a candidate inform the Military Academy of the College Board test results he wishes to be used in determining his qualification. If no such instructions are received, the latest results will be given primary consideration, consistent with his category of nomination. Candidates who designate specific test results, as indicated above, will be notified of their qualification as soon as the test results, plus other required academic data, are received and evaluated at the Military Academy.

In addition to the local College Board examining sites, the College Board tests will be conducted at various military test sites on 14 January and 4 March (Appendix D).

Expenses incident to taking the College Board tests, whether in a local area or at a military test site, will be borne by the candidate.

## Physical Aptitude Examination

*General:* Each candidate is required to establish his qualification in Physical Aptitude. Qualification is determined by an examination designed by the Military Academy to measure strength, coordination,

muscular power, endurance, speed, and agility. It is given at the military test sites (Appendix D) in January and March 1967. For candidates nominated after March, the test will be given at West Point in June 1967.

Qualification is determined on the basis of total performance in five or six physical performance tests (see examples Appendix A). A poor performance on a single test will not necessarily result in disqualification.

A candidate who has qualified in Physical Aptitude in previous years is not required to reestablish his qualification during the current year unless, as a competitive candidate, he desires to take the test again in order to establish a higher test qualification score. Decision in this regard rests with the candidate and no recommendation will be offered by the Military Academy. Primary consideration will be given to the latest test results.

A candidate who is found disqualified on the January 1967 tests will be authorized no further testing for nominations he holds at that time. Should he receive an additional nomination prior to March, he will be authorized to retake the examination at the time of the regularly scheduled March Examination. A candidate nominated after March will be authorized to take the examination in June at West Point.

*Preparation for Examination:* Candidates are advised to prepare for this examination by engaging in vigorous activities such as running, general conditioning exercises, and competitive games rather than in practicing on specific test items.

## **Medical Examination**

*General:* Every candidate, regardless of the type or source of his nomination, must undergo a qualifying medical examination during the twelve months preceding 1 July 1967. This examination may be scheduled by the candidate at one of the authorized medical facilities listed in Appendix C at any time following receipt of his nomination; or he may take the examination at the test site designated in his letter of nomination at the same time he reports for the Physical Aptitude Examination. Regardless of the number of nominations a candidate receives, he need take the medical examination only once. Qualification, or unacceptability, determined by that examination will stand for all nominations held. A General Outline of Medical Considerations is found in Appendix B.

*Procedures:* As soon as possible after receipt of his letter of nomination, the candidate is encouraged to make arrangements with the nearest Authorized Medical Testing Facility (Appendix C) to take the medical examination. To do this, he should contact the Physical Examining Sec-

tion of the Facility, preferably in writing, requesting an appointment to take the *QUALIFYING MEDICAL EXAMINATION* for candidates to the Military Academy. Travel and personal expenses incurred in taking the examination are the responsibility of the candidate. When the examination is completed, all forms and records will be sent by the Examining Facility to The Surgeon General, Department of the Army, for evaluation and determination of qualification. (The examining facility does not have the authority to make a qualification determination on any candidate for the Military Academy.) Within eight weeks following the date of examination, the candidate should receive notification of the results from The Adjutant General, Department of the Army.

A candidate wearing contact lenses must remove them at least 72 hours prior to reporting for the medical examination. At the time of the examination, it is important that he report all previous injuries and operations in order to assist the examining officer and to obviate possible uncertainty in the findings reported.

Should a candidate be unable to make satisfactory arrangements before his designated test period in January or March 1967, he will be afforded the opportunity to take the medical examination at that latter time. Similarly, a candidate who is required to report to West Point for the June 1967 qualification examinations will also be authorized to receive the medical examination during the same period.

*Qualification:* Final qualification is determined by The Surgeon General, U.S. Army. A candidate who is found qualified will not be required to take another medical examination for subsequent nominations. If he is found disqualified due to a non-remediable condition, no further testing as a candidate for the Military Academy will be authorized. If the disqualification is determined remediable, he will be notified by The Adjutant General, Department of the Army, of the corrective measures he must take in order to be reexamined. All inquiries pertaining to final medical qualification should be directed to The Adjutant General, Department of the Army, ATTN: AGPB-M, Washington, D.C., 20315.

### **Medical Examinations Taken for Other Service Academies**

The Medical Qualifying examination for the Military, Naval, and Air Force Academies is the same although the standards differ somewhat due to the commissioning requirements of various services. If a candidate for the Military Academy desires to have copies of his examination forwarded for consideration by the Navy or the Air Force, he must

request the Chief of the Examining Facility to do so at the time he is examined. For the Naval Academy a candidate should request copies be sent to: The Board of Medical Examiners, United States Naval Academy, Annapolis, Maryland. In the case of the Air Force Academy a candidate should request copies be sent to: The Director of Admissions, United States Air Force Academy, Colorado Springs, Colorado. A candidate who takes a qualifying medical examination for another Service Academy and desires that it be used in support of his Military Academy nomination, must take steps analogous to those indicated above. The copies should be sent to: The Surgeon General, Department of the Army, ATTN: Physical Standards Branch, Washington, D.C., 20315. It is the candidate's responsibility to insure that the examination results are so forwarded.

### **Determination of Qualification**

All candidates have their academic, physical aptitude, and medical qualifications determined in the same way. For Principal-Alternate candidates, simple qualification is all that is necessary because their order of consideration has already been designated by the nominating authority. For CONGRESSIONAL and ARMY competitors, their Academic and Physical Aptitude records are evaluated and weighted in order to develop an order of merit within each nominating group. This weighting is made by giving 60% to scholastic factors, 30% to leadership potential and 10% to the results of the Physical Aptitude Examination.

As soon as a qualification in any of the three test areas—Academic, Physical Aptitude, Medical—is determined the candidate is notified by the Department of the Army.

For ARMY competitive candidates, academic qualification will be determined upon receipt of the required scholastic background data, plus the results of the College Board tests taken not later than the December 1966 Test Administration. (Not later than January 1967 for Regular Army Candidates.)

A candidate who takes the Physical Aptitude Examination in January 1967 will have that score applied to all nominations held at that time. Should he subsequently receive a new nomination and desire to retake the test in March, he will be authorized to do so; however, the results of this re-take will apply to the new nomination only. A candidate may elect to have the January results apply to the new nomination.

A candidate who has been notified of his qualifications in the three test areas, need not retake any examinations for an additional nomination received before July 1967. Nevertheless, as a CONGRESSIONAL



candidate, he is authorized to do so as outlined in the paragraphs above. In all cases, the latest information concerning test results and related qualification data, available at the Military Academy, consistent with cutoff dates, are given primary consideration in the final determination of qualification.

## **Disqualification**

A candidate who fails to submit the required College Board results, taken on or before the time specified for his category of nomination, automatically nullifies nomination. His candidacy will no longer be considered. Similarly, a candidate who fails to take the Medical and Physical Aptitude Examinations on or before the March 1967 Test Period will cause his nomination to be nullified unless he is authorized to be tested, at West Point, in June 1967.

When, in the processing of a candidate's record, it is determined that he is unacceptable academically or in physical aptitude, he will be so notified. No further processing of his records will be conducted and no further testing will be authorized for those nominations held at that time. Should he subsequently secure an additional nomination, then his file will be reopened and he will be authorized to submit additional test data in support of this new nomination only.

A candidate who is found to be medically unacceptable will not be authorized further testing as a candidate to the class entering in July 1967.

## **Nominees Who Were Candidates in a Prior Year**

A nominee who was a candidate in a prior year and found to be fully qualified but not selected as an appointee, may have the prior academic and physical aptitude examination results used in determining his current qualification. He *MUST* retake the medical examination. In addition, he must submit to the Military Academy transcripts of his academic work through his latest completed term in college. If he holds a competitive nomination, he may retake any or all of the required College Board and the Physical Aptitude Examinations.

A candidate (except an ex-cadet) once found academically qualified for admission will *normally* be considered academically qualified under any subsequent nomination. Exception to this policy will be made by the Academic Board on an individual case basis.

A nominee who was a candidate in a prior year and found to be unacceptable academically and/or in physical aptitude must retake the required College Board tests and/or Physical Aptitude Examination

before his qualification can be determined. If previously qualified in either of these two areas, he is not required to retake the test for that area.

## Appointment

Each fully qualified candidate nominated before March 1967, and selected for admission with the Class of 1971, will be notified of his appointment status by The Adjutant General Department of the Army. Such appointees will be directed to report to West Point on 1 July 1967.

Those post-March candidates who are tested at West Point in June will receive notification approximately 24 June 1967.

## Qualified Alternates and Qualified Competitors

If it is determined that the number of appointed candidates to the Class of 1971 will not fill the available vacancies allocated for the class, the Academic Board will recommend for appointment candidates who have been found fully qualified but who failed to receive the appointment to the particular vacancy for which they were nominated. In making its selection, the Board will consider the following factors: academic ability based upon the candidate's entire scholastic record; character and other personal attributes, as shown by statements furnished by principals, teachers, and other school officials; evidence of exceptional capabilities; and leadership potential. *No application by a candidate is necessary. All fully qualified unappointed candidates will be considered.* Candidates appointed under this procedure are not charged to the CONGRESSIONAL or ARMY quotas under which they were originally nominated.

## Reapplication

A candidate who qualified for appointment, but is not selected for a class entering the Academy, is encouraged to reapply for a nomination in a subsequent year. Policies as to whether or not the results of previously taken examinations will be considered in such cases are set forth in the section on Examinations.

## Guidance for Appointees—Class of 1971

*Preparatory Physical Conditioning:* Because of the nature of new cadets' training during their first two months at West Point, physical demands are necessarily great. Experience indicates that those cadets who, prior to admission, have conditioned themselves physically are best able to meet the training requirements. The candidate should strive for the

degree of conditioning required for vigorous team sports. He is advised to practice heavy physical conditioning exercises (such as pull-ups, sit-ups, and push-ups) until many repetitions of the exercises can be performed without severe physical strain. In addition, he should strengthen his legs and wind by regular cross-country running and by fast climbing on steep slopes. A program of vigorous competitive sports should be followed, with emphasis on variety of sports rather than on one favorite activity. Any candidate in doubt about his physical-conditioning methods would be well-advised to consult a high school or college physical education department.

*Deposit Upon Entrance:* Because the purchase of his uniforms, textbooks, etc., requires a heavy expenditure of funds during his first year, the appointee should make a deposit of \$300 prior to 15 June of the year of his entrance to the Academy. When such deposit is in the form of a check, it should be made to the Treasurer, USMA, and mailed to him at West Point. The deposit is credited to the cadet's account.

*Immunizations:* The appointee is required to furnish the Surgeon, USMA, by mail, evidence from a physician of successful smallpox vaccination, including type of reaction, given within six months prior to entry to the Military Academy. Candidates examined at West Point in June will be required to submit such documentary evidence, by mail, as soon as possible thereafter. A list of other vaccinations or inoculations received by the appointee should be included.

*Travel Expenses:* New cadets who were members of the Armed Services on active duty are entitled to permanent change of station allowances as provided under the Joint Travel Regulations. New cadets who were not previously members of the Armed Services on active duty are entitled to the permanent change of station allowances for travel actually performed, not to exceed the official distance from the place which the cadet certifies was his actual permanent place of abode, home or school, at the time such travel to the Academy commenced. The allowance for travel at personal expense is 6 cents per mile. Payment of the travel allowance is usually made in the month of September and is credited to the cadet's account. Should the deposit upon entrance plus the travel allowance exceed \$300, the cadet may submit a request to have the excess over \$300 returned to his parents. No action is taken on any request for the return of excess deposit until the travel allowance has been paid. The request for return of excess allowance to parents must be initiated by the cadet.

*Oath of Allegiance:* Each appointee (except an allied cadet) takes the

following oath of allegiance to the United States in a formal ceremony on the day of admission :

I, \_\_\_\_\_,  
do solemnly swear that I will support the Constitution of the United States, and bear true allegiance to the National Government; that I will maintain and defend the sovereignty of the United States, paramount to any and all allegiance, sovereignty, or fealty I may owe to any State or country whatsoever; and that I will at all times obey the legal orders of my superior officers, and the Uniform Code of Military Justice.

*Engagement for Service:* Each appointee to the United States Military Academy shall, if a citizen or national of the United States, sign the following agreement :

I, having been appointed a cadet of the United States Military Academy, do hereby engage, with the consent of my parents or guardian if I am a minor, unless sooner discharged by competent authority :

a. To complete the course of instruction at the United States Military Academy.

b. If tendered an appointment as a commissioned officer in a Regular component of one of the armed services upon graduation from the United States Military Academy, to accept such appointment and to serve under such appointment for not less than five consecutive years immediately following the date of graduation.

c. In the event of the acceptance of my resignation from a commissioned status in a Regular component of such armed service prior to the sixth anniversary of my graduation, or in the event of an appointment in such Regular Service not being tendered, to accept a commission which may be tendered me in a Reserve component and not resign therefrom prior to such sixth anniversary.

d. In the event of my separation or the acceptance of my resignation from the Corps of Cadets, to accept, if qualified, transfer to the Army Reserve in an appropriate enlisted grade and complete the six-year service obligation, including active duty training if required. Further, notwithstanding any of the foregoing, in the event of my separation or the acceptance of my resignation from the Corps of Cadets, to accept, if qualified, transfer to the Army Reserve and to remain subject to being ordered to active duty in an enlisted grade for a period not in excess of four years.

### MISSION

To provide a broad collegiate education leading to the Bachelor of Science degree.

To build an academic foundation for future graduate study.

To stimulate and challenge intellectual curiosity and individual talents.

To develop powers of analysis, reasoning, and expression.

To contribute to the building of character.

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## THE ACADEMIC BOARD

The Academic Board establishes standards and procedures for admission, readmission, advanced placement, validation, academic proficiency, advancement from class to class, graduation, and the granting of diplomas and commissions. The Board recommends separation of cadets for deficiency in academic studies, in conduct, in physical education, and in aptitude for the service. The Board approves courses of instruction, methods of instruction, schedules of instruction, and changes in institutional facilities.

### SUPERINTENDENT, AND PRESIDENT OF THE BOARD:

Maj. Gen. Donald V. Bennett, USA; B.S.

### DEAN OF THE BOARD:

Brig. Gen. John R. Jannarone, USA; B.S., M.S., C.E.

### COMMANDANT OF CADETS AND HEAD OF THE DEPARTMENT OF TACTICS:

Brig. Gen. Richard P. Scott, USA; B.S., M.A.

### PROFESSOR AND HEAD OF THE DEPARTMENT OF—

#### CHEMISTRY:

Col. Donald G. MacWilliams, USA; B.S., M.S., Ph.D.

#### EARTH, SPACE, AND GRAPHIC SCIENCES:

Col. Charles R. Broshous, USA; B.S., M.S.

#### ELECTRICITY:

Col. Elliott C. Cutler, Jr., USA; B.S., M.S., Ph.D.

#### ENGLISH:

Col. Edwin V. Sutherland, USA; B.S., M.A., Ph.D.

#### FOREIGN LANGUAGES:

Col. Walter J. Renfroe, Jr., USA; B.S., M.A., Ph.D.

#### LAW:

Col. Frederick C. Lough, USA; B.S., LL.B.

#### MATHEMATICS:

Col. Charles P. Nicholas, USA; B.S.

#### MECHANICS:

Col. Elvin R. Heiberg, USA; B.S., C.E.

#### MILITARY ART AND ENGINEERING:

Col. Charles H. Schilling, USA; B.S., M.S., Ph.D.

#### MILITARY HYGIENE:

Col. John H. Voegtly, B.S., M.D.

#### ORDNANCE:

Col. John D. Billingsley, USA; B.S., B.S. in M.E., M.B.A.

#### PHYSICS:

Col. Edward A. Saunders, USA; B.S., M.S.E.E., Ph.D.

#### SOCIAL SCIENCES:

Col. George A. Lincoln, USA; B.S., B.A., M.A. (Oxon).

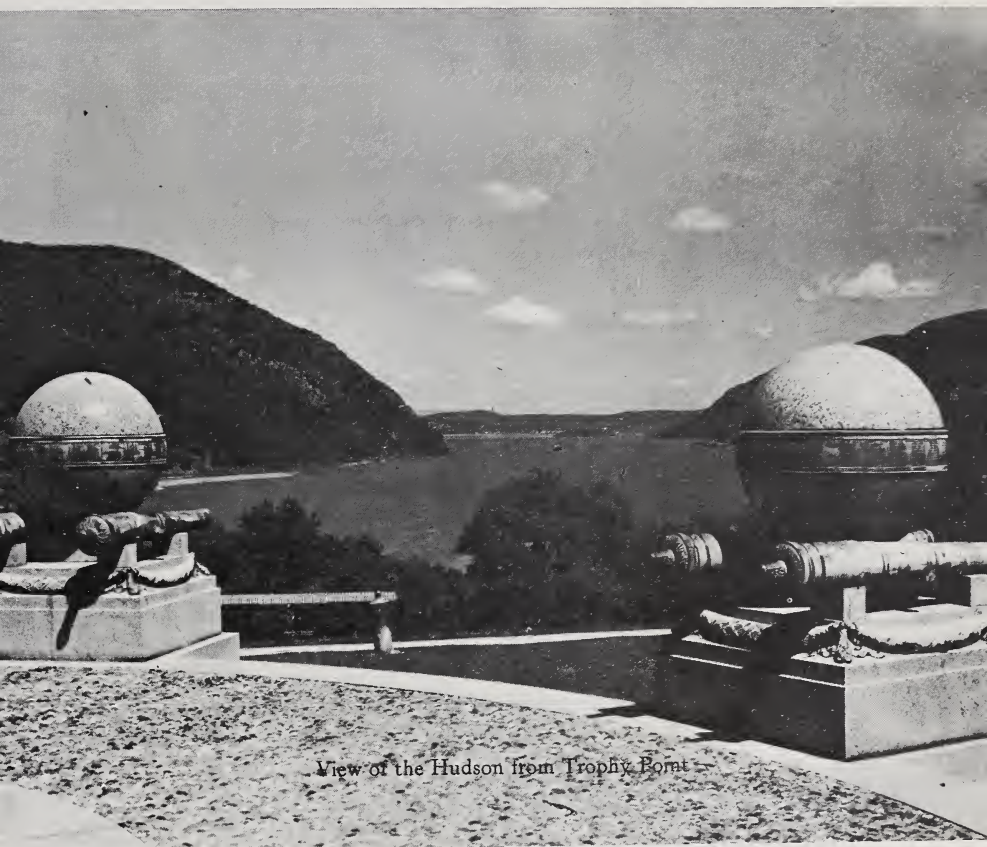
#### DIRECTOR OF ADMISSIONS AND REGISTRAR, SECRETARY TO THE BOARD:

Col. Robert S. Day, USA; B.S., B.S. in Ch.E., M.S.

## Consultants to the Academic Board:

James P. Baxter III, Ph.D., Litt.D., LL.D., President Emeritus, Williams College.

Carl Richard Soderberg, Tekn. D., D.Eng., Institute Professor Emeritus; Professor of Mechanical Engineering, Emeritus; Dean of Engineering, Emeritus, Massachusetts Institute of Technology.



View of the Hudson from Trophy Point

## THE EDUCATIONAL PHILOSOPHY OF THE UNITED STATES MILITARY ACADEMY

The United States Military Academy prepares selected young men for service to their country as professional officers of the United States Army. Since it is the only institution of higher learning with this specific mission, its philosophy of education is unique. The Military Academy must produce enlightened military leaders of strong moral fiber whose minds are creative, critical, and resourceful. The academic curriculum and military training encourage logical analysis, clear and concise expression of considered views, and independent thought and action along with a readiness, developed within the framework of military discipline, to carry out orders without reservation once a decision has been reached.

The total curriculum is designed to develop those qualities of character, intellect, and physical competence needed by the officer who is prepared to lead the smallest combat unit or to advise the highest governmental council. The program includes the sciences, the humanities, and military and physical training. It forms a basis both for graduate education and for further professional development.

In the academic curriculum, standard courses provide the essential core of knowledge of mathematics, science, engineering, the social sciences, and the humanities and an understanding of the application of this knowledge to the solution of problems. Advanced and elective courses afford the opportunity to develop intellectual capacities and to concentrate in areas of particular interest.

Military training provides the requisite knowledge of professional fundamentals and doctrine and of the basic military skills. Service in positions of responsibility in the Corps of Cadets and participation in intensive summer training provide the opportunity to apply and test principles and to learn techniques by practice and observation.

Fitness for military leadership requires physical strength, agility, stamina, and a competitive spirit. These are acquired from a comprehensive course in physical education and from participation in intramural and intercollegiate sports.

The increasing complexity of the world scene requires constant adaptation by the military profession and by the institutions which prepare its leaders. But while adapting itself to the changing world, the Academy must continue to emphasize the devotion to Duty, Honor, and Country which has traditionally been the hallmark of its graduates.

## GENERAL PROGRAMS

### *Bachelor of Science Program*

The Military Academy is accredited by the Middle States Association of Colleges and Secondary Schools. Its academic program provides the student with a broad foundation in the humanities, the social sciences, the natural and engineering sciences, and the military sciences. Graduates of the Academy are accepted for advanced study by the leading graduate schools of the country.

### *Standard Academic Program*

The Standard Academic Program consists of the prescribed courses which fulfill the minimum requirements for graduation. Each cadet must satisfactorily complete each of these courses, unless, on the basis of previously completed college level work or demonstrated ability, he is qualified for enrollment in the Advanced Studies Program.

### *Advanced Studies Program*

The Advanced Studies Program is the academic program or, more precisely, programs, pursued by cadets who validate standard courses or who are capable of taking courses of a more advanced nature. It is designed to recognize and to give credit for previous academic achievement and to permit the cadet to penetrate more deeply into one subject area or to pursue a broader field of study than is required by the Standard Academic Program.

### *Validations*

A cadet who has satisfactorily completed appropriate college-level work before entering the Academy, or who has acquired sufficient knowledge of the subject matter through self-study, may validate standard courses. Normally he must successfully complete validation examinations administered at the Academy by the departments concerned. In addition, candidates are encouraged to submit for validation consideration College Entrance Examination Board Advanced Placement test results. *For each course validated, a cadet will take the next sequential standard course or an appropriate elective course.* A cadet who has appreciable prior knowledge of the subject matter, although not sufficient for validation, or who demonstrates unusual ability, may be enrolled in an advanced course. Advanced courses normally cover the subject matter of the corresponding standard course but include subject matter which is significantly broader or deeper in scope. *From the foregoing it should be apparent that there is a great opportunity for advanced study for those candidates who have, for varying reasons, attended college before enter-*

*ing the Academy. It is important for such a candidate not only to complete the term in which he is enrolled, but also to do as well as possible during the terms he attends college so that he may participate in the validation program to the maximum extent. Furthermore, if the candidate is attending college before entering the Academy he should select very carefully a program of studies which approximates that of the Academy and thus be better assured of validating courses at the Academy.*

### *Elective Courses*

Elective courses are those courses a cadet selects at designated stages in the curriculum. At present, each cadet taking the Standard Academic Program will select and pursue four elective courses during his final two years at the Academy. Cadets who validate standard courses will, at some time between validation and graduation, take additional elective courses in lieu of the validated courses. With approval, cadets of the upper classes may take elective courses in addition to their normal course loads. The elective courses offered are listed in the following pages.

### *Honors Courses*

For a select few cadets Honors Courses are offered in the First Class year.

### *Listing of Courses*

Standard, advanced, and elective courses are shown by departments. Courses for the Fourth Class are numbered in the 100's; courses for the Third Class in the 200's; courses for the Second Class in the 300's; and courses for the First Class in the 400's. Advanced and elective courses are indicated by the second digit, 5 and 8, respectively. For standard and advanced courses the third digit indicates the term in which the course is offered; odd digit for first term, even digit for second term. Elective courses may be offered in either or both terms as indicated in the course description. Credit hours are computed generally on the basis of actual number of hours of classroom instruction per week.

### *Methods of Instruction*

Cadets attend classes in small sections of from 12 to 15 students so that emphasis may be placed on daily student participation. Cadets are normally assigned to sections on the basis of their demonstrated ability in each subject. The resulting homogeneous grouping enables the instructor to pace his teaching to the capability of the student. Thus the cadet is intellectually challenged and the maximum of learning can take place at



all levels. Cadets are resectioned periodically. Weekly posting of grades contributes much to the development of a competitive spirit in academics among cadets. Periodic reports of each cadet's academic progress are provided to parents.

# STANDARD AND ADVANCED STUDY PROGRAMS

## *Courses in the Standard Academic Program*

## *Courses in the Advanced Academic Program*

### *4th Class (Freshman)*

Engineering Fundamentals	Advanced Engineering Fundamentals
Composition, Reading, and Speech- Making	Evolution of American Ideals (1607-1860) Evolution of American Ideals (1860-the Present)
Foreign Language	Accelerated French, German, or Spanish Advanced French, German, Russian or Spanish
Environment	Advanced Environment
Calculus, Analysis, and Linear Algebra	Advanced Programs I, II, or III

### *3d Class (Sophomore)*

General Chemistry	Advanced General Chemistry with Analysis
Comparative Literature	* Elective
Foreign Language	Accelerated French, German or Spanish Advanced French, German, Russian or Spanish
History of Europe and America: 1500 to 1870.	* Elective
History of Europe and America Since 1870	* Elective
Calculus, Differential Equations, Probability Theory and Statistical Inference	Advanced Programs I, II, or III
Physics I	Advanced Physics I
Physics II	Advanced Physics II
General Psychology	* Elective

### *2d Class (Junior)*

Physics III	Advanced Physics III
United States Government	* Elective
Economic Principles and Problems	* Elective
Electives (2)	
Electric Circuits	Augmented Circuits
Electronics	Augmented Electronics
Legal Philosophy and Basic Principles of Law, Legal Methods of Proof	* Elective

*Courses in the Standard  
Academic Program*

Constitutional Law, Military Law  
Fluid Mechanics  
Engineering Mechanics  
Thermodynamics

*Courses in the Advanced  
Academic Program*

\* Elective  
Advanced Fluid Mechanics  
Advanced Engineering\* Mechanics  
Advanced Thermodynamics

*1st Class (Senior)*

Structural Analysis  
Structural Design and Field  
Engineering  
Contemporary Foreign Governments  
History of Modern Asia  
International Relations  
History of the Military Art  
Literature and Advanced Exposition  
Ordnance Engineering  
Military Leadership

Honors Course in Civil Engineering  
*or*  
Introduction to Nuclear Engineering  
\* Elective  
\* Elective  
\* Elective  
\* Elective  
\* Elective  
Honors Course in Ordnance Engineering

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\* Cadets who validate the standard course subjects are eligible to choose an elective.

**ELECTIVE COURSES**  
**IN**  
**SOCIAL SCIENCES—HUMANITIES**

Advanced French Literature  
Advanced German Literature  
Advanced Spanish Literature  
American Literature of the 19th Century  
American Military Institutions and Manpower  
Applied Economic Theory and Defense Economics  
Civilization and Literature of France  
Comparative Economic Systems  
Contemporary Germany  
Contemporary Hispanic-American Literature  
Contemporary Literature  
English Literature from the Beginning to 1660  
English Literature from 1660 to 1900  
Evolution of Modern Warfare (1400-1900)  
French Language Through Literature  
Geography of the USSR  
German Language Through Literature  
History of German Civilization  
History of Russia  
History of U.S. Foreign Relations  
Independent Behavioral Science Research  
Individual Readings and Research Projects in French  
Individual Readings and Research Projects in German  
Individual Readings and Research Projects in Portuguese  
International Law  
Latin American Studies  
Managerial Psychology  
Middle Eastern Studies  
Military and Scientific Readings in French  
Military and Scientific Readings in German  
Military and Scientific Readings in Russian  
National Security Problems  
The Novel  
Political Philosophy  
Portuguese Language Through Literature  
Problems of the Developing Nations  
Regional Geography of the U.S.  
Revolutionary Warfare  
Russian Civilization  
Russian Language Through Literature  
Seminar in History  
Seminar in Public Policy  
Shakespeare  
Sociology: Society and Culture  
Spanish Language Through Literature  
Twentieth Century Warfare (1900-The Present)

**ELECTIVE COURSES  
IN  
MATHEMATICS—SCIENCE—ENGINEERING**

Abstract Algebra  
Advanced Calculus I  
Advanced Calculus II (Complex Variable)  
Advanced Mechanics of Materials  
Advanced Structural Analysis  
Automatic Control Systems  
Automotive Engineering  
Chemistry Research Project  
Computer Science Fundamentals  
Continuum Mechanics  
Design of Concrete Structures  
Differential Equations (Intermediate)  
Digital Computers  
Electromagnetic Fields and Advanced Circuits  
Electromechanical Energy Conversion  
Electronic Circuits  
Engineering Materials  
Experimental Physics  
Gas Dynamics  
Heat, Mass, and Momentum Transfer  
Individual Engineering Projects  
Individual Ordnance Project  
Information Transmission  
Introduction to Theoretical Physics I  
Introduction to Theoretical Physics II  
Linear Algebra and Linear Programming  
Management Engineering  
Mechanical Vibrations  
Mechanics of Materials  
Nuclear Physics  
Nuclear Reactor Theory  
Numerical Analysis with Digital Computation  
Operations Research  
Organic Chemistry I  
Organic Chemistry II  
Physical Chemistry I  
Physical Chemistry II  
Principles of Surveying  
Quantum Mechanics  
Real Variable Theory  
Soil Mechanics  
Solid State Electronics  
Space Mechanics



# STANDARD ACADEMIC SCHEDULE 1966-67

## FOURTH CLASS (FRESHMAN) YEAR

<i>Subject</i>	<i>Frequency of Attendance</i>	<i>Number of Attendances</i>	<i>Length of Period in Minutes</i>	<i>Contact Hours</i>	<i>Semester Credit Hours</i>
Mathematics.....	Every day Mon-Sat.....	214	75	267	15
Engineering Fundamentals.	Every other day Mon-Fri...	90	120	180	5
Environment.....	Every other day Mon-Fri...	90	60	90	5
English.....	Every other day Mon-Fri...	90	60	90	5
Foreign Languages...	Every other day Mon-Fri...	90	60	90	5
Physical Education...	As scheduled.....	143	45-75	126	3
Tactics.....	Twice each week.....	60	60	60	2.5

## THIRD CLASS (SOPHOMORE) YEAR

Mathematics.....	Every other day Mon-Sat...	107	80	143	8
Chemistry.....	Every other day Mon-Sat...	107	80	143	8
Physics.....	Every other day Mon-Sat...	107	80	143	8
Foreign Languages...	Every other day Mon-Sat...	107	80	143	8
History, Europe and America.	Every other day Mon-Fri...	90	60	90	5
English.....	Every other day Mon-Fri...	<sup>1</sup> 45	60	45	2.5
Psychology.....	Every other day Mon-Fri...	<sup>2</sup> 45	60	45	2.5
Physical Education...	As scheduled.....	72	55-75	82	1.5
Tactics.....	Twice each week.....	44	60	44	1.5

## SECOND CLASS (JUNIOR) YEAR

Fluid Mechanics and Thermodynamics.	Every other day Mon-Sat...	107	80	143	8
Electric Circuits and Electronics.	Every other day Mon-Sat...	107	80	143	8
Atomic and Nuclear Physics.	Every other day Mon-Sat...	53	80	71	4
Engineering Mechanics.	Every other day Mon-Sat...	53	80	71	4
Economics; U.S. Government.	Every other day Mon-Fri...	90	60	90	5
Law.....	Every other day Mon-Fri...	90	60	90	5
Electives (2).....	Every other day Mon-Fri...	90	60	90	5
Tactics.....	Twice each week.....	47	60	47	2.5
Physical Education...	As scheduled.....	48	55-75	58	1.5

<sup>1</sup> First term.

<sup>2</sup> Second term.

## FIRST CLASS (SENIOR) YEAR

<i>Subject</i>	<i>Frequency of Attendance</i>	<i>Number of Attendances</i>	<i>Length of Pe- riod in Minutes</i>	<i>Contact Hours</i>	<i>Semes- ter Credit Hours</i>
Civil Engineering . . .	Every other day Mon-Sat . . .	106	80	141	8
History of the Military Art.	Every other day Mon-Sat . . .	106	80	141	8
Contemporary For- eign Governments; Modern Asia; In- ternational Rela- tions.	Every other day Mon-Sat . . .	106	80	141	8
Ordnance Engineer- ing.	Every other day Mon-Sat . . .	106	80	141	8
Electives (2) . . . . .	Every other day Mon-Fri . . .	90	60	90	5
English . . . . .	Every other day Mon-Fri . . .	<sup>2</sup> 45	60	45	2.5
Leadership . . . . .	Every other day Mon-Fri . . .	<sup>1</sup> 45	60	45	2.5
Tactics . . . . .	Twice each week . . . . .	54	60	54	1.5
Physical Education . .	As scheduled . . . . .	54	55-75	64	1

<sup>1</sup> First term.

<sup>2</sup> Second term.

## THE ACADEMIC DEPARTMENTS

### OFFICE OF THE DEAN

*Dean:* Brig. Gen. John R. Jannarone

*Associate Dean:* Lt. Col. D. L. Knoll, Jr.

*Assistants to the Dean:*

*Operations:* Lt. Col. J. W. Mastin

Lt. Col. A. H. Blair

Capt. F. J. McConville

*Research and Analysis:* Maj. J. R. Kintz

Capt. R. C. Bennett

*Computer Science:* Lt. Col. W. F. Luebbert

*Administration:* Mrs. J. M. Micksin

### DEPARTMENT OF EARTH, SPACE AND GRAPHIC SCIENCES

*Professor:* Col. C. R. Broshous (Head of Department).

*Associate Professors:* Lt. Cols. W. B. Rogers, W. C. Smith.

*Assistant Professors:* Lt. Cols. J. E. Fox, G. A. McClellan; Majs. D. A. Andrews, R. W. Badger, P. D. Booras, K. R. Ebner, T. P. Graham, H. J. Hatch, M. E. Kallman, R. E. Littlefield, E. K. Wintz; Capts. E. S. Diez, J. R. Jenkins, M. G. Swindler, D. F. Svendsen.

*Instructors:* Maj. J. B. Garver; Capts. J. M. Davis, G. Z. Demers, L. D. Hammond, J. R. Harrell, L. R. Hayden, H. J. Hubbard, III, J. H. Jones, T. F. Plummer, Jr., A. G. Pokorny, Jr., D. W. Reeves, R. L. Reynard, L. B. Rodenberg, Jr., G. B. Rogers, Jr., M. D. Schoonmaker, L. G. Smith, J. E. Sobraske, R. L. Stone, G. D. Tebben, C. C. Thudium, Jr., D. I. Walter, N. S. Williamson, III.

### Standard Courses

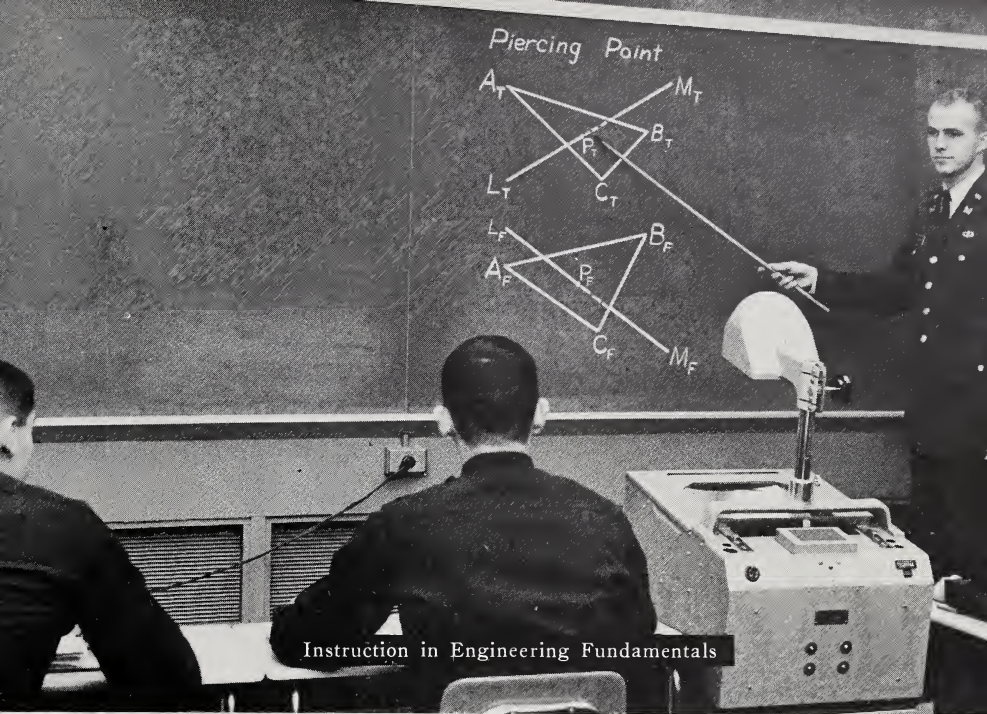
#### EF 101-102. ENGINEERING FUNDAMENTALS

*Introduction to the Digital Computer.* Programming for and operation of the General Electric 225 Digital Computer utilizing a pseudo-machine language and FORTRAN II.

*Graphical Techniques.* Single-stroke gothic lettering, technical sketching, use of the drawing instruments, and a brief introduction to graphs, diagrams, and graphic training aids.

*Graphical Representation.* The theory of projection, orthographic, isometric, oblique, and perspective projection; the spatial relationship of points, lines, and planes, and working drawings. Includes a brief introduction to basic mechanical elements, conventions, basic dimensioning, and limit dimensions followed by a simple design project.

*Graphical Calculations.* Basic principles of vector geometry, nomography, and graphical calculus with limited applications.



*Earth Measurements.* A brief familiarization with the measurement of horizontal and vertical distances and horizontal and vertical angles at or near the surface of the earth. The instruments used and the need for accurately determining these measurements. Includes a brief introduction to mapping and the theory of errors and measurements.

*5 Credit Hours.*

#### EV 101-102. ENVIRONMENT

*Physical Geography.* Descriptive study of a number of earth sciences which gives a general insight into the nature of man's environment and provides a sound physical basis for later work in world geography. Included are introductions to geomorphology, geology, hydrology, meteorology, climatology, pedology, and physical oceanography. Map studies are emphasized throughout.

*World Geography.* An introductory study of man's activities in response to his physical environment. This course initially examines basic concepts of geography and geographic methods of analysis using and reinforcing the knowledge previously gained in Physical Geography.

The major geographic regions of the world are then examined and specific political units within each region are studied in detail to reveal man's economic and social activities.

*Astronomy-Astronautics.* Emphasis is placed on the physical characteristics of the bodies in the solar system and the nature of their relative motions. Included as the basis for this investigation are the elements of electromagnetic radiation and celestial mechanics. A study of the physical characteristics and motions of stars constitutes the primary line of investigation beyond the solar system. Astronautics is incorporated into the course with a brief study of current United States' space programs.

*5 Credit Hours.*

## Advanced Courses

### EF 151-152. ADVANCED ENGINEERING FUNDAMENTALS

Prerequisite: One year of engineering graphics in a recognized engineering college or equivalent, and demonstration of a satisfactory degree of proficiency in engineering graphics by passing a special validation examination. Offered in lieu of Engineering Fundamentals 101-102.

Advanced Engineering Fundamentals is a rigorous course going beyond the usual freshman level to consider in depth descriptive geometry, vector geometry, graphical calculus, and nomography. Brief introductions to graphical arithmetic and algebra, empirical equations, and harmonics and Fourier Series are included. A team project in which a practical engineering problem is investigated and graphical solutions presented, concludes the graphics portion of the course. Basic programming for the GE 225 Digital Computer and earth measurements receive a coverage comparable with EF 101-102.

*5 Credit Hours.*

### EV 151-152. ADVANCED ENVIRONMENT

Prerequisite: A strong high school or college record of World Geography and satisfactory performance on a validating examination in World Geography.

*Physical Geography.* (Same as for EV 101-102)

*Astronomy-Astronautics.* (Same as for EV 101-102)

*Geography of the USSR.* The course seeks to provide the student with an understanding of the distribution of the physical, cultural and economic elements of the USSR. The physical aspects of the country, i.e., the landforms, mountain systems, drainage patterns and climate, are first studied. Cultural geography, the peoples and nationalities of the Soviet Union, is then surveyed. Economic geography follows with



a survey of agriculture, natural resources and industrial development of the country. Finally the student is concerned with regional geography and a survey of each of the major geographic regions is made.

*5 Credit Hours.*

## **Elective Courses**

### **EF 382. COMPUTER SCIENCE FUNDAMENTALS (*Either Term*)**

Prerequisites: Open to all 1st and 2d Classmen and to 3d Classmen who stand in the top  $\frac{1}{3}$  in Math.

This course provides the cadet who already possesses a minimum basic familiarity with the use of digital computers a comprehensive introduction to the computer science field. Special attention is directed to military and business-oriented computer applications, math-science-engineering computer applications, systems analysis techniques, computer aided decision making and data processing methods.

*2.5 Credit Hours.*

### **EF 384. PRINCIPLES OF SURVEYING (*Second Term*)**

Prerequisite: EF 101-102 (or 151-152)

This course provides a foundation in the principles of surveying in sufficient depth to permit application to military mapping, construction surveying, artillery firing, optical tooling, and forms a basis for further study in related engineering fields. Course includes a familiarization with the instruments and equipment used in modern civil and military surveying and the theoretical concepts of measurements, probability, and errors, celestial observations, tachymetry, and photogrammetry.

*2.5 Credit Hours.*

### **EV 381. GEOGRAPHY OF THE USSR (*Either Term*)**

Prerequisites: Open to all cadets who have completed EV 101-102.

This course covers the demographic, physiographic, climatic, agricultural, industrial, transportation, and mineral resource patterns of the USSR. Geographic factors—cultural, economics, and physical—are related to the human activity in agriculture and industry. The knowledge gained by the cadet will contribute to the foundation required for assessing USSR capabilities.

*2.5 Credit Hours.*

### **EV 384. REGIONAL GEOGRAPHY OF THE UNITED STATES (*Second Term*)**

Prerequisite: EV 101-102.

Regional analysis of the major economic subdivisions of the United States. Study of how demographic, physiographic, climatic, resource,

and cultural factors have contributed to existing industrial, agricultural and transportation patterns. The understanding thus gained of the industrial, agricultural and resource bases of our nation will serve the cadet as a standard of comparison in the analysis of any other nation or region of the world.

*2.5 Credit Hours.*

## DEPARTMENT OF ELECTRICITY

*Professor:* Colonel E. C. Cutler, Jr. (Head of Department).

*Associate Professors:* Lt Cols. S. E. Reinhart, Jr., R. B. Andreen.

*Assistant Professors:* Lt Col. E. E. Emerson; Majs. F. L. Day, R. T. Goodwyn, III, B. C. Giallourakis; Capts. J. J. P. Meehan, A. B. Salisbury.

*Instructors:* Maj. D. K. Blackham; Capts. T. E. Olson, M. L. Moore, N. B. Penrose, C. J. Zabriskie, W. I. Brownfield, L. C. Ranch, J. R. Berti.

### Standard Courses

#### EL 301. ELECTRIC CIRCUITS

Charge, current, and voltage; Kirchhoff's Laws; Complex Phasor representation; sources, waveforms, and instruments; power; resistance; resistive networks and theorems; inductance and capacitance; natural and total response; reactance and impedance; resonance; ac network analysis; coupled circuits; magnetic circuits and transformers; laboratory work.  
4 Credit Hours.

#### EL 304. ELECTRONICS

Concepts of electronic systems; signal representation; electronic circuit representation; resistive two-ports, attenuators, and summers; analysis of tank circuits, piezoelectric crystals, and Butterworth filters; simple telephone systems; diode electronics; linear and non-linear diode circuits; triode and transistor electronics, parameters, and graphical analysis; equivalent circuits; amplifiers; coupling, gain, and frequency response; feedback amplifiers; oscillators; modulation and detection; radio waves and antennas; transmitters and receivers; laboratory work.  
4 Credit Hours.

### Advanced Courses

#### EL 351. AUGMENTED CIRCUITS (*First Term*)

Prerequisite: Concurrent with EL 383.

Augmented course replacing EL 301 for cadets pursuing the EE Program. Charge, current, and voltage; Kirchhoff's Laws; LaPlace transform; sources, waveforms, and instruments; resistance (R), inductance (L), and capacitance (C); power; impedance; network theorems; network solutions by the LaPlace transform; steady-state response; poles and zeros; frequency dependence; linear two-port networks; attenuators; magnetic circuits and transformers; laboratory work.  
4 Credit Hours.

## EL 354. AUGMENTED ELECTRONICS (*Second Term*)

Prerequisite: EL 383.

An augmented course replacing EL 304 for cadets pursuing the EE Program; diode electronics and rectifiers; linear and non-linear diode circuits; triode and transistor electronics, parameters, and graphical analysis; equivalent circuits; multielectrode devices; amplifiers; amplifier response and compensation; large-signal amplifiers; classes of operation; feedback; stability; oscillators; amplitude modulation and detection; frequency and phase modulation.

*4 Credit Hours.*

## Elective Courses

### EL 382. ELECTROMECHANICAL ENERGY CONVERSION (*Second Term*)

Prerequisite: EL 301 or EL 351.

Basic Principle of electromechanical energy conversion; review of magnetic circuits; principle of virtual work and its application to rotating and translating devices; dc generators and motors; alternators; synchronous motors; induction motors; the general machine; constraints for ac and dc machines; the reluctance motor; the metadyne; introduction to feedback control systems; use of the LaPlace transform; laboratory work.

*4 Credit Hours.*

### EL 383. ELECTROMAGNETIC FIELDS AND ADVANCED CIRCUITS (*First Term*)

Prerequisites: PH 202 and MA 202; concurrent with EL 351.

Vector analysis; gradient, divergence, and curl; static electric and magnetic fields; Maxwell's hypothesis and equations; plane waves, reflection, and refraction; radiation and antennas; waveguides, ionospheric propagation and radar; laboratory work.

Signal representation in electrical and electronic systems; LaPlace transform; singularity functions; superposition and convolution; introduction to Fourier series and transforms; frequency analysis and Bode diagrams; tank circuits and filters; coupled circuits; laboratory work.

*4 Credit Hours.*

### EL 481. ELECTRONIC CIRCUITS (*First Term*)

Prerequisite: EL 304 or EL 354.

Transistor circuits; biasing and stabilization; multielectrode tubes and semiconductors; LaPlace transform; response of amplifiers; coupling; compensation; inductive coupling and tuning; classification of amplifiers; thermal conduction and runaway; complementary symmetry; feedback; oscillators; switches.

*2.5 Credit Hours.*

## EL 483. DIGITAL COMPUTERS (*First Term*)

Prerequisite: EL 304 or EL 354.

Capabilities and limitations of digital computers; organization and operation; electrical construction; system design, planning, and applications. Extensive laboratory work including investigation of computer electronic circuits, and assembly of a portion of a specimen computer. Practical work on an actual digital computer involving operating techniques and programming methods.

*2.5 Credit Hours.*

## EL 484. INFORMATION TRANSMISSION (*Second Term*)

Prerequisite: EL 304 or EL 354.

Basic concepts of random time functions; frequency and time domains, types of modulation, random signal theory; applications of probability theory and statistical inference; network analysis, elements of information theory; noise sources and noise figure; signal-to-noise ratio; applications to communications and radar systems.

*2.5 Credit Hours.*

## EL 486. SOLID-STATE ELECTRONICS (*Second Term*)

Prerequisites: EL 304 or EL 354, and PH 305.

Band structure of semiconductors; density of states; Fermi level; mobility, lifetime, recombination, and trapping; diffusion and drift; space charge; high-field effects; optical behavior; surface properties and thin films; single-junction devices, including rectifiers, avalanche diodes, field-effect transistors, tunnel diodes, and photodiodes; transistors and multiple-junction devices; fabrication techniques; thin-film networks; integrated solid-state circuits. Laboratory work.

*2.5 Credit Hours.*

## EL 487. AUTOMATIC CONTROL SYSTEMS (*First Term*)

Prerequisite: EL 382.

The composition of linear servomechanisms; transfer functions; block diagrams; time and frequency domains; dynamic analysis of systems; Routh-Hurwitz criteria; Nyquist and Bode diagrams; Nichols charts; root-locus plots; performance criteria; steady-state errors; stability; stabilization and compensation. Laboratory work.

*2.5 Credit Hours.*



## DEPARTMENT OF ENGLISH

*Professor:* Col. E. V. Sutherland (Head of Department).

*Associate Professors:* Lt. Cols. W. C. Burton, J. L. Capps, C. R. Kemble.

*Assistant Professors:* Maj. P. W. Child, Jr., E. J. Cutler, J. W. Wensyel (Executive Officer); Capt. K. A. Barlow, J. T. Munsey.

*Instructors:* Maj. D. C. Ahearn, W. E. Haas, P. G. Jones, W. S. May, J. T. Murchison, Jr., W. L. Pritchard, Jr., D. H. Rumbough, N. A. Spiro; Capt. G. A. Bailey, B. B. Beasley, H. B. Bynell, J. H. Coreth, S. J. Delikat, S. W. Focer, Jr., F. M. Franks, Jr., W. C. Haponski, H. H. Jordan, M. D. Mahler, D. Martin, Jr., T. J. McAniff, M. L. Plassmeyer, L. A. Spurlock II, F. R. Stevens, Jr., C. W. Sullinger, F. W. Willett, R. E. Winters, A. T. Zukowski, 1st Lt. J. L. Tribble.

### Standard Courses

#### EN 101-102. COMPOSITION, READING, AND SPEECH-MAKING

This is a standard first year course in effective communication. It consists of instruction in the logic and mechanics of expository expression and includes the critical evaluation of cadet writing and speech-making. During the course, the cadets are introduced to the principles of research and the forms of literature.

*5 Credit Hours (2.5 each term).*

#### EN 201. COMPARATIVE LITERATURE

This course is a study of selections from the masterpieces of world literature. Among the writers studied are Homer, Plato, Dante, Shakespeare, Milton, Goethe, Yeats, Frost, and Eliot. The course emphasizes that literature treats generally (1) man's relationship with God, (2) man's relationship with his fellow man, and (3) man's relationship with nature. The cadet develops his skill in speaking through classroom analysis of the assigned reading; he develops his skill in writing through the preparation of formal papers which include a criticism of a novel and a research paper.

*2.5 Credit Hours.*

#### EN 202. COMPARATIVE LITERATURE

This course, the same as EN 201, is offered during the second semester to qualified Fourth Classmen.

*2.5 Credit Hours.*

#### EN 402. LITERATURE AND ADVANCED EXPOSITION

This course consists of readings in exposition, drama, and the novel, and advanced expository theme writing. The objectives are (1) to develop further the student's ability to write and speak effectively, and (2) to improve his skill in logical analysis and criticism.

*2.5 Credit Hours.*



### Advanced Courses

#### EN 151. THE EVOLUTION OF AMERICAN IDEALS AS REFLECTED IN AMERICAN LITERATURE, 1607-1860

The course is a study of the part played by American literature in the development of our national character. Among the writers studied are Taylor, Edwards, Franklin, Jefferson, Emerson, Thoreau, Hawthorne, Melville, and Poe.

*2.5 Credit Hours.*

#### EN 152. THE EVOLUTION OF AMERICAN IDEALS AS REFLECTED IN AMERICAN LITERATURE, 1860-PRESENT

This course is a continuation of EN 151. Among the writers studied are Whitman, Lincoln, Howells, James, Clemens, Crane, Benét, Frost, Eliot, O'Neill, Hemingway and Faulkner.

*2.5 Credit Hours.*

## Elective Courses

### EN 481. THE NOVEL (*First Term*)

This course is a study of the development of the novel as a mode of literary expression. Approximately ten representative novels of America and Europe will be read.

*2.5 Credit Hours.*

### EN 482. SHAKESPEARE (*Second Term*)

This course is a study of selected plays and poems from Shakespeare.

*2.5 Credit Hours.*

### EN 483. CONTEMPORARY LITERATURE (*First Term*)

This course is a study of major American and European writers between 1900 and the present.

*2.5 Credit Hours.*

### EN 484. AMERICAN LITERATURE OF THE NINETEENTH CENTURY (*Second Term*)

This course examines the works of nine major nineteenth-century American authors: Emerson, Thoreau, Hawthorne, Melville, Poe, Mark Twain, Whitman, Dickinson, and James.

*2.5 Credit Hours.*

### EN 485. ENGLISH LITERATURE FROM THE BEGINNING TO 1660 (*First Term*)

This course consists of a study of representative authors and trends from Old and Middle English to the Restoration.

*2.5 Credit Hours.*

### EN 486. ENGLISH LITERATURE FROM 1660 TO 1900 (*Second Term*)

This course is a study of representative authors and trends in English literature from the Restoration to 1900.

*2.5 Credit Hours.*

## DEPARTMENT OF FOREIGN LANGUAGES

*Professors:* Col. W. J. Renfroe, Jr. (Head of Department), Col. S. Willard.

*Associate Professors:* Lt. Cols. D. T. Dunne, H. Reiner.

*Assistant Professors:* Lt. Col. T. J. Stacy; Maj. J. W. Crance, K. A. Frith, J. F. Hook, J. Knight, T. J. Livesay, C. A. Olsen, P. F. Parks, J. T. Rears, J. R. Ross, R. D. Vanderslice; Capt. G. A. Richardson; Dr. F. Tiller; Messrs. F. C. H. Garcia, N. Maltzoff, C. Viollet.

*Instructors:* Maj. W. F. Dunkelberger, E. P. Freedman, E. F. Grubbs, Jr., D. A. McNerney; Capt. R. E. Bell, Jr., J. E. Bohman, W. C. Buell, W. P. Clary, Jr., W. F. Cody, J. W. Fisher, L. V. Hightower III, O. A. Jambon, B. Loeffke, P. S. Meckel, R. R. Moore 3d, J. O. Neal, Jr., K. J. O'Neill, D. B. Pruitt, J. F. Santilli, Jr., R. J. Schiemann, P. B. Schmidt, E. J. Shimek II, J. C. Toole, E. S. Tyler, F. L. Wilmoth.

*Foreign Instructors:* Maj. W. Cremer (German Army), H. Perales (Mexican Army).

*Executive Officer:* Lt. Col. E. F. Crowley.

NOTE: Each cadet is required to study one foreign language—French, German, Portuguese, Russian, or Spanish—during his first two years at West Point. The approximate percentage of the entering class to be assigned to each language is fixed by the Department of the Army. Within these quotas cadets are assigned according to their preferences and previous foreign language experience. In general, a cadet is encouraged to continue at West Point the study of a language begun elsewhere. Advanced courses in French, German, Russian and Spanish are offered cadets who wish to continue the study of those languages and who demonstrate their proficiency in oral and written tests given shortly after their arrival at West Point. Cadets may also take up to four additional semesters of foreign language study by pursuing elective courses in their third and fourth years.

### Standard Courses

LF 101–102. FRENCH

LG 101–102. GERMAN

LP 101–102. PORTUGUESE

LR 101–102. RUSSIAN

LS 101–102. SPANISH

Basic course in the language. In keeping with the primary objectives of speaking and understanding, oral work is stressed. Audio-lingual skills are developed by reading aloud, repetition drills, question and answer exercises, prepared and extemporaneous dialogues, individual short talks, and frequent use of the language laboratory. After the first month of the course, all classroom work is normally in the foreign language.

5 Credit Hours (2.5 each term).

LF 201-202. FRENCH  
LG 201-202. GERMAN  
LP 201-202. PORTUGUESE  
LR 201-202. RUSSIAN  
LS 201-202. SPANISH

Continuation of the 101-102 courses, with increased emphasis on applied grammar through discussions, dialogues, individual talks, and frequent aural comprehension exercises. Periodic themes. Reading and discussion of several literary works and of historical, geographical, and military material of current interest. Six or seven lectures on the history and civilization of the people whose language is being studied. All work conducted in the foreign language.

*8 Credit Hours* (4 each term).

### **Accelerated Courses**

LF 141-142. FRENCH  
LG 141-142. GERMAN  
LS 141-142. SPANISH

Prerequisite: One or two years of previous study of the language.

An intermediate course with oral-aural emphasis and a thorough grammar review. Audio-lingual skills are developed by use of pattern drills, question and answer exercises, dialogues, and individual talks. Texts of literary value are read and discussed in class. All classroom work is in the foreign language.

*5 Credit Hours* (2.5 each term).

LF 241-242. FRENCH  
LG 241-242. GERMAN  
LS 241-242. SPANISH

Prerequisite: Completion of the 141-142 courses.

Continuation of the 141-142 courses, with increased emphasis on grammatical and syntactical accuracy, both in speech and writing. Reading of selected modern works, to include some writings on military subjects. Periodic themes. Six or seven lectures on various cultural aspects of the people whose language is being studied. All classroom work is in the foreign language.

*8 Credit Hours* (4 each term).

### **Advanced Courses**

LF 151-152. FRENCH  
LG 151-152. GERMAN



LR 151-152. RUSSIAN

LS 151-152. SPANISH

Prerequisite: Proficiency based on oral and written tests administered prior to the beginning of Fourth Class year.

Intensive grammar review, with aural-oral emphasis. Extensive use of pattern drills, question and answer exercises, dialogues, individual talks, and periodic themes. Reading and discussion of modern drama and fiction. All classroom work is in the foreign language.

5 Credit Hours (2.5 each term).

LF 251-252. FRENCH

LG 251-252. GERMAN

LR 251-252. RUSSIAN

LS 251-252. SPANISH

Prerequisite: The 151-152 courses in the corresponding language.

Increased use of audio-lingual techniques, talks, debates, and interpreter exercises. Reading in a wider field of literature. Greater emphasis upon the culture and history of the countries concerned, including a series of lectures. Some reading of military writing. All classroom work is in the foreign language.

8 Credit Hours (4 each term).

## Elective Courses

LF 381. FRENCH LANGUAGE THROUGH LITERATURE (*First Term*)

LG 381. GERMAN LANGUAGE THROUGH LITERATURE (*First Term*)

LP 381. PORTUGUESE LANGUAGE THROUGH LITERATURE  
(*First Term*)

LR 381. RUSSIAN LANGUAGE THROUGH LITERATURE (*First Term*)

LS 381. SPANISH LANGUAGE THROUGH LITERATURE (*First Term*)

Prerequisite: The 201-202 or 241-242 courses in the corresponding languages.  
Not open to cadets who have completed the applicable 251-252 courses.

Readings in literary works by French, German, Brazilian, Russian, Spanish, or South American writers. Class discussions, oral and written compositions, all in the appropriate foreign language.

2.5 Credit Hours.

LF 382. MILITARY AND SCIENTIFIC READINGS IN FRENCH  
(*Second Term*)

LG 382. MILITARY AND SCIENTIFIC READINGS IN GERMAN  
(*Either Term*)

Prerequisite: The 201-202 or 241-242 or 381 courses in the corresponding language.

Military and scientific readings. Class discussions, themes, translation into and from the foreign language.

*2.5 Credit Hours.*

LP 382. PORTUGUESE LANGUAGE THROUGH LITERATURE  
(*Second Term*)

LR 382. RUSSIAN LANGUAGE THROUGH LITERATURE (*Second Term*)

LS 382. SPANISH LANGUAGE THROUGH LITERATURE (*Second Term*)

Prerequisite: The appropriate 381 course, plus demonstrated ability to use the language in more complex situations.

Studies in the history and literature of the respective countries. Class discussions, comparative studies, oral and written presentation of material, all in the appropriate foreign language.

*2.5 Credit Hours.*

LF 483. CIVILIZATION AND LITERATURE OF FRANCE (*First Term*)

Prerequisite: LF 251-252 or LF 381-382 or LF 241-242 (upper half) courses.

This course is an integrated study of geography, history and literature, introducing the cadet to the most significant political and social changes as well as to the most typical literary works of each period in order to form a comprehensive picture of the country's life and culture. Contributions to the civilization of the western world will be emphasized. Classroom work is in the foreign language.

*2.5 Credit Hours.*

LF 484. CIVILIZATION AND LITERATURE OF FRANCE (*Second Term*)

Prerequisite: LF 251-252 or LF 381-382 or LF 241-242 (upper half) or LF 483 courses.

Continuation of LF 483—Civilization and Literature of France.

*2.5 Credit Hours.*

LG 483. HISTORY OF GERMAN CIVILIZATION (*First Term*)

Prerequisite: LG 382 or LG 252.

This course is an integrated study of the geography, history, and culture of Germany, introducing the cadet to the most significant political, social and economic, and artistic events of each period in the country's growth and development. Emphasis will be placed on the German contributions to Western civilization. "History of German Civilization" will be a comprehensive survey. Classroom work is in the foreign language.

*2.5 Credit Hours.*

LG 484. CONTEMPORARY GERMANY (*Second Term*)

Prerequisite: LG 382 or LG 252.

This course is a detailed study of contemporary Germany, introducing



the cadet to the political, social, economic, and artistic events since the end of World War II. Emphasis will be placed on Germany's national problems and on her contributions to the Western community of nations, to the Common Market, and to NATO. Classroom work is in the foreign language.

*2.5 Credit Hours.*

#### LR 483. MILITARY AND SCIENTIFIC READINGS IN RUSSIAN (*First Term*)

Prerequisite: LR 251-252 or LR 381-382.

Intensive readings in scientific and military literature to prepare the student to read and understand current Russian literature in these subjects.

*2.5 Credit Hours.*

#### LR 484. RUSSIAN CIVILIZATION (*Second Term*)

Prerequisite: LR 251-252 or LR 381-382.

Greater proficiency in the language to be acquired through a survey of

the historical and cultural elements that have developed the USSR and the Russian people. The course will be given in Russian.

*2.5 Credit Hours.*

#### LS 483. CONTEMPORARY HISPANIC-AMERICAN LITERATURE

*(First Term)*

Prerequisite: LS 251-252 or LS 381-382 or LS 241-242 (upper half).

A study of outstanding modern authors of Spanish-American Literature. The development and transformation of existing literary genres; new literary forms. Hispanic-American literature as a mirror of history and society of the nations involved. Classroom work is in the foreign language.

*2.5 Credit Hours.*

#### LS 484. CONTEMPORARY HISPANIC-AMERICAN LITERATURE

*(Second Term)*

Prerequisite: LS 251-252 or LS 381-382 or LS 241-242 (upper half).

Continuation of LS 483—Contemporary Hispanic-American Literature I.

*2.5 Credit Hours.*

#### LF 485. ADVANCED FRENCH LITERATURE *(First Term)*

#### LG 485. ADVANCED GERMAN LITERATURE *(First Term)*

#### LS 485. ADVANCED SPANISH LITERATURE *(First Term)*

Prerequisite: The appropriate 251-252 or 381-382 courses.

A survey course of the literature of France, Germany, or Spain. Class discussions, themes, outside reading, reports, in the appropriate foreign language.

*2.5 Credit Hours.*

#### LF 486. ADVANCED FRENCH LITERATURE *(Second Term)*

#### LG 486. MODERN GERMAN LITERATURE *(Second Term)*

#### LS 486. ADVANCED SPANISH LITERATURE *(Second Term)*

Prerequisite: LF 485 or LG 251-252 or LG 381-382 or LG 485 or LS 485 courses.

Advanced studies in the contemporary literature of France, Germany, and Spain, with class discussions, themes, etc., in the appropriate foreign language.

*2.5 Credit Hours.*

#### LP 485. INDIVIDUAL READING AND RESEARCH PROJECTS IN PORTUGUESE *(First Term)*

#### LF 487. INDIVIDUAL READING AND RESEARCH PROJECTS IN FRENCH *(First Term)*

LG 487. INDIVIDUAL READING AND RESEARCH PROJECTS  
IN GERMAN (*First Term*)

Prerequisite: LP 381-382 or LF 485-486 or any two semesters in the LG 400 series.

These courses are intended for those cadets who have the demonstrated language ability and a strong personal desire to perform individual research in the appropriate language by a more detailed study of a particular period of history or literature. All work will be done in the foreign language. Cadets taking these courses will meet individually with the instructor at least once a week.

*2.5 Credit Hours.*

LP 486. INDIVIDUAL READING AND RESEARCH PROJECTS  
IN PORTUGUESE (*Second Term*)

LF 488. INDIVIDUAL READING AND RESEARCH PROJECTS  
IN FRENCH (*Second Term*)

LG 488. INDIVIDUAL READING AND RESEARCH PROJECTS  
IN GERMAN (*Second Term*)

Prerequisite: LF 487 or LP 485 or any two semesters in the LG 400 series.

Continuation of LP 485, LF 487, LG 487—Individual Reading and Research Projects in Portuguese, French or German.

*2.5 Credit Hours.*



## DEPARTMENT OF LAW

*Professor:* Col. F. C. Lough (Head of Department).

*Associate Professor:* Col. A. D. Porcella.

*Assistant Professors:* Lt. Cols. H. A. Fisher, T. C. Oldham, P. B. Polak.

*Instructors:* Majs. R. W. Jones, J. Norton, J. F. Thornton; Capt. P. J. Kenny,  
Capt. J. W. Hedges, Lt. Joseph McAuliffe.

### Standard Courses

#### LW 301. LEGAL PHILOSOPHY AND BASIC PRINCIPLES OF LAW LEGAL METHODS OF PROOF

*Legal Philosophy and Basic Principles of Law.* An examination of the principal theories of law which have been set forth by prominent legal philosophers of Western Civilization as well as an introduction to the nature and application of law and a coverage of the traditional legal subjects to include contracts, torts, property and the law of persons.

*Legal Methods of Proof.* An introduction to the Anglo-American rules of proof and the logical basis for such rules with particular emphasis on developing an ability to think logically and to reason rationally in both legal and non-legal areas.

*2.5 Credit Hours.*

#### LW 302. CONSTITUTIONAL LAW MILITARY LAW

*Constitutional Law.* An examination of the Constitutional concept of United States government including legislative, judicial and executive powers and limitations; individual rights under the Constitution; the defense establishment and constitutional powers with respect to International Law.

*Military Law.* A study of punishments, the component parts of crimes and offenses, criminal responsibility, selected articles of the UCMJ, jurisdiction, pretrial matters, nonjudicial punishment and courts-martial procedures. Basic theories and practical procedures are joined to enhance the cadet's ability to discharge his future responsibilities in military law.

*2.5 Credit Hours.*

### Elective Course

#### LW 481. INTERNATIONAL LAW (*Either Term*)

An introduction to International Law to include a discussion of the nature and sources of International Law; problems of nationality; recognition of states; jurisdiction of states; international agreements and diplomatic intercourse; and the law of war.

*2.5 Credit Hours.*

## DEPARTMENT OF MATHEMATICS

*Professors:* Col. C. P. Nicholas (Head of Department), Col. J. S. B. Dick.

*Associate Professors:* Col. G. W. Bixby, Col. W. H. Karstedt, Lt. Col. D. H. Cameron.

*Assistant Professors:* Lt. Cols. R. H. Allen, T. C. Bielicki, M. C. Carrigan, T. H. M. Crampton, P. J. Donohoe; Maj. J. S. Crosby, W. R. Johansen, J. F. Martin, R. M. McPherson, D. M. Rhea; Capt. R. A. Beltz, J. C. Burke, R. E. Clark, Jr., A. A. Cockrell, Jr., J. B. Kaiser, B. W. Rose, F. A. Waskowicz.

*Instructors:* Lt. Col. G. W. Medsger; Maj. R. H. Allison, M. J. Conrad, E. E. DeMaris, C. R. Domeck, P. G. P. Eliot, J. E. Fiscus, J. R. Matteson, G. J. McRee, C. D. Richards, C. H. Spence, E. Valence, Jr.; Capt. T. R. Bennett, R. N. Bierly, D. R. Carrier, W. F. Chamberlain, B. M. Cowan, W. Echevarria, J. G. Felber, Jr., R. H. Gates, V. J. Gongola, F. H. Griffis, Jr., P. Makowski, G. C. Mitchell, G. L. Richardson, J. W. Searles, H. J. Skidmore, Jr., W. J. Skinner, B. F. Stout, R. S. Yelverton, W. T. Zaldo, III.

Mathematics at West Point is organized into programs at ascending levels, known as standard, advanced, and elective. During the first two years every cadet is enrolled in either the standard program or in one of three advanced programs, depending on his mathematical preparation and aptitude. The elective program is available to all cadets during the third and fourth years, and overlaps with the advanced programs during the first two years.

Successful completion of the standard program by the end of the second year satisfies the requirement in mathematics for graduation from the Military Academy. The three advanced programs are designed for cadets who, by virtue of exceptional aptitude or above-standard preparation before entering West Point, are able to complete the standard program at an accelerated pace, thus gaining time for extra courses chosen from the elective program. Such cadets may complete from one to four of these elective courses ( $2\frac{1}{2}$  to 10 credit hours) during their first two years, depending on how much time they gain by validation and acceleration.

During the first year cadets attend mathematics 6 days a week, during the second 3 days a week. All cadets perform five independent exercises on the digital computer during these two years, regardless of whether their program be standard or advanced. The courses constituting the standard and advanced programs are shown below. Parentheses indicate courses for which credit is given by validation.

**Standard Program:** First year, MA 101–102; second year, MA 201–202–204. Validation credit, none; residence credit, 23 hours.

- Advanced Program I:** First year, MA 101–(108)–156; second year, MA 483–202–204. Validation credit,  $2\frac{1}{2}$  hours; residence credit, 23 hours.
- Advanced Program II:** First year, MA (107)–157–(108)–481–158; second year, MA 483–202–204. Validation credit, 5 hours; residence credit, 23 hours.
- Advanced Program III:** First year, MA (109)–159–481–202–204; second year, MA 483–484–485. Validation credit, 10 hours; residence credit, 23 hours.

(*Note.* During his first year in Program III the cadet completes most of the mathematics required for graduation, and by special arrangement may complete all of it. His electives during the second year need not be in mathematics, but if he chooses mathematics the appropriate courses are the three shown above.)

The subject-matter content of the separate courses is described in the outlines to follow.

## Standard Courses

### MA 101. CALCULUS AND ANALYSIS

This is the fall semester course in the standard program cadet's first year. Calculus is introduced early in the semester by work in foundations of the number system to include nested intervals, the concept of  $\epsilon$ , variables, limits and infinite position numerals, followed by work in controlled numerical approximations, functions of a single real variable, the  $\delta$ — $\epsilon$  criterion, and continuity. Prerequisite topics of plane analytic geometry not sufficiently covered in the student's mathematical preparation prior to entering the Military Academy are introduced at the proper time. Derivatives and differentials of algebraic and transcendental functions, with fundamental applications, and derivatives of functions defined parametrically are studied. Numerical methods suitable to digital computation are emphasized.

*7.5 Credit Hours.*

### MA 102. CALCULUS, ANALYSIS AND LINEAR ALGEBRA

This is the first year spring semester course for the standard program following Mathematics 101. It continues with further applications of the

derivative and differentials; introduction to differential equations to include the central force problem and applications to long range trajectories and orbits; analytic geometry of three dimensions; linear algebra to include vector spaces, the algebra of matrices, linear transformations, characteristic values and vectors, and quadratic forms. The course closes with a return to calculus, to include partial differentiation and applications, vector differentiation, the gradient, the divergence, the curl, and fundamental concepts of integral calculus. The latter includes formal integration and introduction to elementary numerical approximations of definite integrals. Problems in digital computation, applying principles of calculus, are assigned concurrently. In addition there are a few lessons in spherical trigonometry essential for military applications.

*7.5 Credit Hours.*

### MA 201. CALCULUS

This course is given during the first term of the standard program cadet's second year of mathematics. It further develops the integral calculus started in MA 102, to include applications to geometrical and physical problems, infinite series, expansion of functions, and multiple integrals. Problems requiring digital computation are assigned concurrently.

*3 Credit Hours.*

### MA 202. DIFFERENTIAL EQUATIONS

This is a brief course in differential equations, following the completion of calculus. Continuing from the introduction to differential equations given in first year calculus, it treats solutions of standard types of first, second and higher order equations using integrating factors, undetermined coefficients, variation of parameters, the Laplace transform, and power series. Solutions by numerical methods are included, with an applicatory exercise using the digital computer. Basic methods for the solution of systems of linear differential equations and partial differential equations are introduced. The course includes applications of ordinary and partial differential equations in physics and engineering.

*2 Credit Hours.*

### MA 204. PROBABILITY THEORY AND STATISTICAL INFERENCE

This is the final course in the mathematics sequence required for graduation from USMA, and it emphasizes calculus as a prerequisite. Included are fundamentals of probability theory and mathematical models to include random variables, probability distributions and measurements of these distributions, probability and density functions;

binomial and normal distributions; use of de Moivre's theorem, the Central Limit theorem, and the Student-t, Chi-Square and Poisson distributions; basic statistical inference including sampling distributions, theory of estimation, hypothesis testing; correlation; and applications of these techniques to practical problems.

*3 Credit Hours.*

## **Validation and Advanced Placement Courses**

### **MA 107. INTRODUCTION TO ANALYTIC GEOMETRY AND CALCULUS**

This course consists of basic plane analytic geometry and an introduction to operating techniques of differential calculus. Cadets who completed substantially equivalent work before admission to USMA may qualify for validation credit by demonstrating their proficiency to the satisfaction of the Department of Mathematics. Those who do so are enabled to take an advanced placement course during their first semester at West Point. (See MA 157.) Cadets who have not completed the equivalent of MA 107 before entering USMA take residence work in the same subject matter as an integral part of MA 101 and MA 102.

*2.5 Validation Credit Hours.*

### **MA 108. INTRODUCTION TO SOLID ANALYTIC GEOMETRY AND INTEGRAL CALCULUS**

This course consists of basic solid analytic geometry, plus an introduction to operating techniques of integral calculus and basic linear algebra. Cadets who completed substantially equivalent work before entering USMA, or those able to master the content by residence work at a considerably faster pace than is customary, may qualify for validation credit by demonstrating their proficiency to the satisfaction of the Department of Mathematics. Those who do so are enabled to take an advanced placement course during the second semester of their first year at West Point. (See MA 156 and MA 158.) Cadets not qualifying for validation of MA 108 take residence work in the same subject matter as an integral part of MA 102 and MA 201.

*2.5 Validation Credit Hours.*

### **MA 109. BASIC ANALYSIS AND LINEAR ALGEBRA**

This course consists of plane and solid analytic geometry, basic linear algebra, and the principal operating techniques of differential and integral calculus at the college level. Cadets who completed substantially equivalent work before entering USMA may qualify for validation credit by demonstrating their proficiency to the satisfaction of the De-



partment of Mathematics. Those who do so are enabled to take an advanced placement course at the highest level during their first year at the Military Academy. (See MA 159.) Cadets receiving no validation credit take residence work in the subject matter of MA 109 as an integral part of MA 101, MA 102 and MA 201.

*10 Validation Credit Hours.*

#### MA 156. ADVANCED PLACEMENT CALCULUS, ANALYSIS AND LINEAR ALGEBRA

This course is given in the second semester of the first year to selected cadets who completed MA 101 with high standing and also qualify for validation credit for MA 108. The content of MA 156 is equivalent to MA 102 plus 201, less: (1) vector differentiation; (2) multiple integrals; and (3) the validated subject matter of MA 108. The linear algebra in this course is at a somewhat higher level than that in MA 102.

*7.5 Credit Hours.*

#### MA 157. ADVANCED PLACEMENT CALCULUS AND ANALYSIS

This course is given in the first semester of the first year to cadets who qualify for validation credit for MA 107. The course concentrates on foundations of the number system, introductory theory of functions, and a rigorous treatment of differential calculus for functions of a single real variable. The content is equivalent to MA 101 plus MA 102 through introductory differential equations and most of solid analytic geometry, less the validated subject matter of MA 107.

*7.5 Credit Hours.*

#### MA 158. ADVANCED PLACEMENT CALCULUS, ANALYSIS AND LINEAR ALGEBRA

This course is given in the second semester of the first year to cadets who satisfactorily completed MA 157 and who also qualify for validation credit for MA 108. MA 158 provides an accelerated treatment of the linear algebra portion of MA 102 (doing so at a higher level than MA 102) and continues with a rigorous treatment of integral calculus for functions of a single real variable, expansion of functions, and infinite series, plus an introduction to calculus of functions of two or more variables. The content is equivalent to the portions of MA 102 beginning with linear algebra, plus MA 201, less: (1) vector differentiation; (2) multiple integrals; and (3) the validated subject matter of MA 108.

*5 Credit Hours.*

## MA 159. ADVANCED PLACEMENT CALCULUS, ANALYSIS, AND LINEAR ALGEBRA

This course is given in the first semester of the first year to cadets who qualify for validation of MA 109. The course concentrates on foundations of the number system, introductory theory of functions, rigorous treatment of differential and integral calculus for functions of a single real variable, an introduction to partial derivatives, and an introduction to linear algebra. The content is equivalent to MA 101, MA 102 and MA 201, less: (1) vector differentiation; (2) multiple integrals; and (3) the validated subject matter of MA 109.

*7.5 Credit Hours.*

### Elective (Advanced) Courses

These courses in advanced mathematics are offered to all cadets as electives during their third or fourth year at West Point. In addition, qualified cadets may complete one or more of these courses during their first and second years at West Point, as participants in one of the advanced programs.

## MA 481. LINEAR ALGEBRA AND LINEAR PROGRAMMING (*Either Term*)

Prerequisite: MA 102.

This course starts with a study of linear transformations on a vector space. It includes vector operations, vector spaces, matrices, determinants, properties of linear transformations, systems of linear equations, characteristic values and vectors, and quadratic forms. The linear programming portion is concerned with the optimal solution of a system of linear equations. It includes an introduction to convex sets and  $n$ -dimensional geometry, a development of the linear programming problem, and the simplex computational procedure. Practical problems emphasizing military applications and their solutions using the digital computer are included.

*2.5 Credit Hours.*

## MA 482. ABSTRACT ALGEBRA (*Either Term*)

Prerequisite: MA 156 or MA 481. By permission of the Head of the Department of Mathematics only.

This is an introductory course in the abstract structures of algebra for those cadets planning specifically to take graduate work in mathematics soon after graduation or those competing for a National Science Foundation fellowship in mathematics. The subject is introduced by a study of mappings and operations defined on sets. The development of group and ring theory is the basis of the course. A study of the ring of

polynomials and examples of fields are included. The course culminates with vector spaces as the unifying concept.

*2.5 Credit Hours.*

#### MA 483. ADVANCED CALCULUS I (*First Term*)

Prerequisite: MA 201.

This course treats differential and integral calculus of scalar and vector functions of more than one variable to include: Jacobians, gradient, curl, divergence, multiple integrals, line and surface integrals, Green's Theorem, the Divergence Theorem and Stokes' Theorem. Applications to problems in physics and engineering are emphasized.

*2.5 Credit Hours (Afternoon Elective)*

*3 Credit Hours (Morning Elective).*

#### MA 484. DIFFERENTIAL EQUATIONS (INTERMEDIATE) (*Either Term*)

Prerequisite: MA 202.

This course includes ordinary differential equations; power series solutions and the more important special functions of engineering; Fourier Series and orthogonal functions; partial differential equations and boundary value problems; numerical methods; and applications to science and engineering.

*2.5 Credit Hours.*

#### MA 485. ADVANCED CALCULUS II (COMPLEX VARIABLE) (*Either Term*)

Prerequisite: MA 483.

This course is primarily an introduction to functions of a complex variable, including algebra of a complex variable, elementary functions, limits, derivatives, Cauchy's Integral Theorem and Formula, series representation to include Taylor's and Laurent's series, theory of residues, conformal mapping and linear transformations, Poisson's Integral Formula, and special topics in complex potential.

*2.5 Credit Hours.*

#### MA 486. NUMERICAL ANALYSIS WITH DIGITAL COMPUTATION (*Second Term*)

Prerequisite: MA 202. (May be taken concurrently.)

This course emphasizes the methods of numerical analysis with the digital computer in a strong supporting role. It includes methods grouping together the cadet's entire mathematical background in linear algebra, calculus, and differential equations in a context of modern numerical methods requiring programming and execution of solutions on the digital computer.

*2.5 Credit Hours.*

## MA 487. REAL VARIABLE THEORY (*Second Term*)

Prerequisites: MA 483 and MA 485. By permission of the Head of the Department of Mathematics only.

This is a senior-undergraduate mathematics course designed for those cadets planning specifically to take graduate work in mathematics soon after graduation or those competing for a National Science Foundation fellowship in mathematics. It introduces students to Dedekind cuts, advanced set theory, metric spaces, and some concepts in topology. Many topics from the calculus previously studied, such as convergence, continuity, and sequences are studied more deeply in this setting. The properties of the definite integral are expanded to the Riemann-Stieltjes integral.

*2.5 Credit Hours.*

## DEPARTMENT OF MECHANICS

*Professors:* Col. E. R. Heiberg (Head of Department), Col. F. A. Smith, Jr.

*Associate Professors:* Majs. J. D. Daigh, K. E. Ginter, S. R. Hanmer, Jr.

*Assistant Professors:* Majs. J. L. Dozier, G. U. Loffert, R. L. Parsons, H. N. Schwarzkopf, A. M. Solberg, J. K. Strozier; Capts. D. E. Beach, Jr., R. E. Hudson, M. S. Jones, G. R. Kleb, G. H. G. Krafft, C. M. Radler, C. P. Rhicard, G. R. Robertson, J. M. Sigler, R. D. Welch, Jr.

*Instructors:* Maj. B. A. Logerquist; Capts. J. B. Hilmes, B. C. Johnson, R. D. Kenyon, B. D. March; Lt. L. F. Ermold.

### Standard Courses

#### ME 301. THERMODYNAMICS

A study of the transfer and conversion of thermal energy and mechanical energy. The course includes a study of fundamentals, types of energy, properties of thermodynamic media, the first and second laws of thermodynamics, the ideal gas, thermodynamic processes, gas engine cycles, vapor power cycles, refrigeration, nozzles and jet propulsion, and mixtures. The more capable students study the fundamentals of heat transfer in lieu of certain reviews and examinations.

*Laboratory.* A correlation of theory and practice. The equipment used includes gasoline, Diesel and fuel research engines, steam engines and turbines, air compressors, gas turbines, and refrigeration and air conditioning units.

*4 Credit Hours.*

#### ME 302. FLUID MECHANICS

A study of the laws of mechanics as they apply to liquids, vapors, and gases. The course includes a study of fluid properties; principles of fluid statics; fluid flow concepts; impulse-momentum; viscous effects; closed conduit flow; boundary layer and basic drag concepts; dimensional analysis and dynamic similitude; flow measurement; open channel flow; aerodynamics with emphasis on lift, drag, flight stability, and shock effects in transonic and supersonic flight; compressible flow. The more capable students solve a special problem in lieu of certain reviews and examinations.

*Laboratory.* Practical exercises illustrating theory previously studied in the classroom. Equipment used includes pumps, turbines, flow measurement devices, pipe friction measurement devices, supersonic and subsonic wind tunnels, smoke tunnels, and a supersonic nozzle thrust stand.

*4 Credit Hours.*



## ME 303. ENGINEERING MECHANICS (*Either Term*)

The relationships between external effects and force systems for particles and rigid bodies are developed by vector mathematics as an engineering science. The statics portion of the course includes a study of equilibrium in two and three dimensions, centroids, distributed forces, analysis of trusses and frames, shear and bending moment diagrams, and friction. The dynamics portion of the course consists of a study of kinematics and kinetics for both particles and rigid bodies. Newton's Second Law, work-energy and impulse-momentum methods are used in particle dynamics. Dynamic analysis by Newton's Second Law is taught for rigid bodies. Mechanical vibrations are introduced.

*4 Credit Hours.*

## Advanced Courses

### ME 351. ADVANCED THERMODYNAMICS

Prerequisite: Demonstrated superior ability in physics and mathematics.

An accelerated coverage of the subject material of ME 301 with further study of the First and Second Laws of Thermodynamics and their consequences. Emphasis is on a vigorous mathematical analysis of thermodynamic systems and media.

*4 Credit Hours.*

### ME 352. ADVANCED FLUID MECHANICS

Prerequisite: Demonstrated superior ability in Thermodynamics and Engineering Mechanics.

A vector-oriented coverage of the topics listed in ME 302, with emphasis on the theoretical and mathematical development of the general laws of fluid mechanics. A knowledge of vector algebra is assumed; however, the field operators of vector calculus are developed carefully and thoroughly.

*Laboratory.* Practical exercises illustrating theory developed in the classroom. Equipment available includes pumps, turbines, flow measurement devices, pipe friction measurement devices, supersonic, subsonic and smoke tunnels, and a supersonic nozzle thrust stand.

*4 Credit Hours.*

### ME 353. ADVANCED ENGINEERING MECHANICS (*Either Term*)

Prerequisite: Demonstrated superior ability in physics and mathematics.

Coverage of the subject material of ME 303 is accelerated. Space trusses, virtual work and stability are also included in statics. Dynamic analysis of rigid bodies by work-energy and impulse-momentum, system of particles, bodies of variable mass, general three-dimensional motion

of a rigid body and damped and forced vibrations problems are added to the dynamics subject material of ME 303.

*4 Credit Hours.*

## Elective Courses

### ME 384. MECHANICS OF MATERIALS (*Second Term*)

Prerequisite: ME 303 or ME 353.

This course develops the elastic and inelastic relationships between external forces (loads) acting on deformable bodies and the stresses and deformation produced. The study includes centric, torsional, flexural and combined loading, beam theory, column theory, and the influence of properties of materials. Laboratory exercises illustrating the above principles are conducted frequently throughout the course.

*4 Credit Hours.*

### ME 386. ADVANCED MECHANICS OF MATERIALS (*Second Term*)

Prerequisites: ME 303 or ME 353 and consent of instructor.

Subject material of Me 384 is covered in greater depth. The final portion of this course is a special design problem of a beam-column member.

*4 Credit Hours.*

### ME 481. GAS DYNAMICS (*Either Term*)

Prerequisites: ME 301 or ME 351, ME 302 or ME 352.

A course covering the general field of compressible fluid motion including topics of interest in aeronautics, astronautics, and the study of ballistic missiles. The course presents basic principles of fluid dynamics and thermodynamics and proceeds to concepts peculiar to both subsonic and supersonic compressible flow. Principal analysis of fluid motion is one-dimensional covering isentropic flow, normal shock waves, and flow in ducts with heat transfer and friction. An introduction to two and three-dimensional supersonic flow is also presented including a study of oblique shock waves and expansions and conical shock waves.

*2.5 Credit Hours.*

### ME 482. HEAT, MASS AND MOMENTUM TRANSFER (*Second Term*)

Prerequisites: ME 301 or ME 351, ME 302 or ME 352.

This course offers a unified treatment of transfer phenomena, emphasizing the similarities between heat, mass, and momentum transfer processes, where applicable. Included is a broad treatment of ablation, boiling, condensation, drying of solids, heat exchanger design, and radiation, including turbulent as well as laminar solutions.

*2.5 Credit Hours.*

### ME 483. SPACE MECHANICS (*Either Term*)

Prerequisite: ME 303 or ME 353.

An introduction to the trajectory problem of the space vehicle applying the principles of mechanics to the orbits of satellites and other bodies in space acted on by a central force system. The course includes a study of the bodies of the solar system, the development of Kepler's Laws of motion, the geometry of two-body conic orbits, principal coordinate systems, and astrodynamic constants. A brief consideration is made of the 3-body problem, the n-body problem, and several methods of orbit determination. The final portion of the course is a study of rendezvous, interception, and interplanetary orbits.

*2.5 Credit Hours.*

### ME 485. CONTINUUM MECHANICS (*First Term*)

Prerequisites: ME 301 or ME 351, ME 302 or ME 352, ME 303 or ME 353.

This course forms a foundation for deeper study in special branches such as hydrodynamics, gas dynamics, elasticity and plasticity. Necessary concepts and theorems of tensor geometry are developed at the start. Study of state of stress, kinematics of instantaneous motion, the fundamental mass, momentum and energy theorems, and constitutive equations form the foundation. This is followed by study of perfect fluids, viscous fluids, plastic materials and elastic materials.

*2.5 Credit Hours.*

### ME 486. MECHANICAL VIBRATIONS (*Second Term*)

Prerequisite: ME 303 or ME 353.

This introductory course in vibrations provides the necessary background for continued development in this rapidly expanding field. Free, damped, and forced vibrations of the linear single degree of freedom system are covered in detail. Shock induced vibrations, shock spectrum analysis, and non-linear single degree of freedom systems including a study of phase-plane technique are presented. Multi-degree of freedom systems are studied with particular attention on matrix analysis, numerical methods and computer solutions. Analysis of continuous systems provides a vehicle for the discussion of differential equations, boundary value problems, and eigenvalue solutions.

*2.5 Credit Hours.*

## DEPARTMENT OF MILITARY ART AND ENGINEERING

*Professors:* Col. C. H. Schilling (Head of Department), Col. T. E. Griess.

*Associate Professors:* Lt. Cols. C. P. Benedict, C. W. Guth.

*Assistant Professors:* Lt. Cols. R. W. Argo, M. D. Johnson, L. H. Lumsden, J. D. Thomas; Maj. W. H. Elliott, J. P. Franklin, A. F. Grum, J. R. McDonald, T. R. Peterson, J. L. Pigg; Capt. D. J. Palladino.

*Instructors:* Lt. Cols. R. D. Pinto, J. Rutledge; Maj. R. L. Ackerson, R. J. Eineigl, D. R. Palmer, L. F. B. Reed, E. J. Rush, C. E. Sell; Capt. W. R. Miller, E. H. Turek, J. W. Woodmansee.

### Standard Courses

#### HM 401-402. HISTORY OF THE MILITARY ART

Prerequisites: MI 301-302. (May be taken concurrently.)

The evolution of the art of war—on land, on sea, and in the air, and its probable course in the future. Beginning with the campaigns of Alexander of Macedon, this course explains the changes in concepts of warfare which led to the replacement of royal armies by national armies, and to the emergence of global and total wars. The historic development and modern application of all types of warfare are considered, from guerrilla operations to nuclear warfare. Throughout the course, emphasis is given to: the impact of continuous technological and industrial progress of the techniques of warfare through the development of new weapons and equipment; the gradual recognition, formulation, and application of the governing principles of war; the increasing influence of logistics on strategy and tactics; the growing interrelationship of land, sea, and air power, and the consequent problems and principles involved in the organization and functioning of high commands in joint operations; the resurgence of irregular and unconventional warfare; the attributes of outstanding great captains and their contributions to the art of war; and to the doctrines and philosophies of important military thinkers and writers. The course also points out the impact on warfare of nonmilitary factors—treated in detail by the Department of Social Sciences—concurrently with the study of military operations.

*8 Credit Hours.*

#### CE 401. STRUCTURAL ANALYSIS

Prerequisites: ME 303 or ME 353. (ME 384 or ME 386 is recommended.)

Analysis of stresses in statically determinate and indeterminate structures and structural members due to uniform loadings, concentrated loadings, and combinations thereof. It includes determination of

reactions, shear, moment, and axial stresses; placement through the use of influence lines of moving live loads to produce maximum stress; the analysis of maximum stress in simple and subdivided, parallel and non-parallel chord trusses, continuous beams, and basic structural frames; the analysis of members subject to reversal of stress; introduction to the analysis of long span structures, space frames, and cables; and approximate methods of analysis of indeterminate structures. Analytical methods utilized for indeterminate structures include moment-area theorems, slope deflection and moment distribution. The augmented course given upper sections (upper 30–40 percent of class) consists of the above with advanced additional material. The upper section cadet pursues one of four elective subcourses during the last six lessons of the term. Each subcourse covers the analysis of more complicated indeterminate structures involving rigid frames with sidesway and sloping legs, support settlement and elastic supports, introduction to non-prismatic members, and analysis of multistory frames. The method of analysis is either Moment Distribution, Slope Deflection, Energy Methods, or Matrix Methods. Throughout the course emphasis is given to development of an understanding of the engineering philosophy and the decision-making process.

*4 Credit Hours.*

## CE 402. STRUCTURAL DESIGN AND FIELD ENGINEERING

Prerequisite: CE 401.

Study of the principles and theory of design of steel and timber structures, with an introduction to reinforced concrete design. The Steel Design subcourse includes design of beams, tension and compression members, and riveted and welded joints. Fatigue considerations are included. The engineering characteristics of timber as a material and the design of simple timber structural members are included in the Timber Design subcourse. A large portion of the course is devoted to the solution of a complete engineering analysis-design problem starting with the development of the engineering concept and requiring creative thought and the application of principles studied previously. The introductory study of soils includes classification and identification systems and engineering characteristics of soils. Instruction in concrete includes engineering characteristics of concrete as a material, fundamentals of concrete proportion and mix design, and placement and curing. Concrete laboratory work includes standard quality and control tests and demonstration of the fundamental laws.

The augmented course given upper sections includes a more extensive



coverage of the above topics with the following additional material: a more comprehensive engineering analysis design problem; the basic theory of reinforced concrete design to include design of beams, slabs, web reinforcement, and columns; introduction to prestressed concrete design. Throughout the course emphasis is given to development of an understanding of the engineering philosophy and decision-making process.

*4 Credit Hours.*

## Advanced and Honors Courses

### CE 451-452. HONORS COURSE IN CIVIL ENGINEERING

Prerequisite: ME 303. (ME 384 or ME 386 is recommended.) Standing in top 25 percent in 4th Class Mathematics, top 15 percent in 3d Class Mathematics, Physics, and Mechanics of Solids.

*Note.* All cadets who meet the prerequisites will be notified in May of the Academic Year preceding the year they are scheduled for CE 401 or CE 453. The 12 most qualified volunteers, as determined by the Head of the Department, will then be enrolled in CE 451-2 in lieu of CE 401-2 or CE 453-4.

The Honors Course for exceptionally capable cadets includes the topics listed above in the two standard courses (CE 401 and CE 402). The cadet accelerates this study at a pace determined by his own individual capability. He is excused from regular class formations, instead meeting weekly (as a minimum) with his advisor. Teaching techniques normally used for graduate studies are employed, emphasizing individual study and research. The time gained is used to cover each subject in more depth through the use of additional references and to study advanced topics of cadet choice or an individual analytical and/or laboratory project, where approved by the advisor.

These advanced topics represent approximately one-third of the course, and in combination with the deeper coverage of the standard course material result in an increase of approximately fifty percent in the scope of the course as compared with the standard course. Typical approved additional topics from which the cadet may choose include but are not restricted to the following:

*Structural Analysis:* Numerical integration for shear, moment, and deflection, conjugate beam theory; non-prismatic beam analysis by slope deflection and moment distribution; Castigliano's Theorem; Theory of Least Work; structural applications of Topology, Matrix Methods, and Network Analogy; introduction to analysis of structures by the plastic theory; electronic digital computers and their application to the solution of civil engineering problems.

*Structural Design:* An extension of reinforced concrete design; basic theory of prestressed concrete; optimization techniques in design; and probabilistic approach to safety factors.

*Soils and Concrete:* Characteristics of air-entrained concrete, soil mechanics laboratory, and soil trafficability.

*8 Credit Hours.*

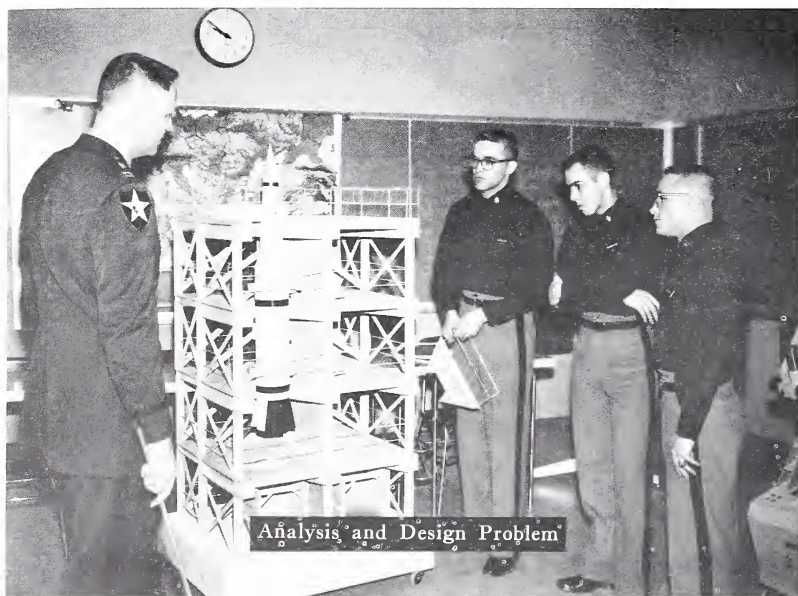
## Elective Courses

### HM 381. REVOLUTIONARY WARFARE (*Second Term*)

Prerequisite: None.

This course provides a study of the art of waging and countering revolutionary warfare to accomplish national objectives. It supplements HM 401-402 by providing more thorough and detailed coverage than is possible in the regular course. The course includes studies of the historic development of revolutionary warfare, stressing its various forms, its different causes, and the differing techniques required to meet varied conditions of climate, terrain, and enemy activity. It also covers outstanding theorists in this form of warfare, the employment of revolutionary warfare in support of conventional military operations, and the Communist emphasis on offensive revolutionary warfare.

*2.5 Credit Hours.*



## HM 481. EVOLUTION OF MODERN WARFARE (1400–1900) (*First Term*)

Prerequisite: HM 401. (May be taken concurrently.)

The course traces the evolution of the art of warfare in the western world from the late Medieval Age to the dawn of the twentieth century. Supplementing the material presented in the History of the Military Art course (HM 401–402), this elective probes more deeply into the correlative development of weapons, tactics, strategy and organization, theories of warfare and defense of the state.

*2.5 Credit Hours.*

## CE 453–454. INTRODUCTION TO NUCLEAR ENGINEERING

Prerequisites: ME 303 or ME 353, PH 305. (EL 382, ME 384 or ME 386 is recommended.) PH 487 is a concurrent requirement with CE 453 (exceptions may be made by the Head of the Department).

This course is offered to selected cadets in lieu of, or in addition to, the standard Civil Engineering course CE 401–402. It provides study of engineering principles applied in the broad nuclear power field, with emphasis on the engineering philosophy involved in the transition from scientific theory to the solution of practical problems. The course includes the basic principles of structural analysis, radiation effects and health physics, radiation attenuation and shield design, pressure vessel design, and reactor and energy conversion system analysis and design. Introduction to nuclear power plant economics and to engineering applications of nuclear explosives are also included. The course culminates in a complete analysis-design problem illustrating the theory and principles studied previously.

*8 Credit Hours.*

## HM 484. TWENTIETH CENTURY WARFARE (1900–THE PRESENT) (*Second Term*)

Prerequisite: HM 402. (May be taken concurrently.)

This course provides a study of the evolution of warfare during the 20th century by emphasizing the development of weaponry, tactics, organization and generalship. Beginning with the Russo-Japanese War of 1904–05, the major wars of the century are considered in their operational aspects as well as their impact on the development of the military art. A portion of the course is devoted to a consideration of some of the major command decisions of World War II in order to develop a better understanding of the pertinent factors which led to their solutions. This

course supplements HM 402 by a more penetrating study of the development of modern warfare than is possible in the broad scope of the regular course.

*2.5 Credit Hours.*

**CE 381. SOIL MECHANICS (*Either Term*)**

Prerequisite: ME 303 or ME 353. (May be taken concurrently.)

A study of the fundamentals of soil mechanics and the application of these fundamentals to engineering problems. The introductory lessons are focused on an understanding of the composition and structure of granular and clay soils and soil-water consistency. Other soil characteristics studied include permeability, stress distribution, consolidation, shearing strength, slope stability, bearing capacity and earth pressures. These studies are combined with the principles of engineering mechanics and mathematics in attacking and solving practical problems such as prediction of settlement, calculation of seepage, drainage design, earth dams and embankments, footing and pile foundations, retaining walls, soil stabilization and soil trafficability. The use of electronic computers in these applications is demonstrated where applicable. Basic laboratory work comprises determination of Atterbert limits, soil compaction, unconfined compression, direct shear, flow net analysis and other tests associated with the solution of soil engineering problems.

*2.5 Credit Hours.*

**CE 481. DESIGN OF CONCRETE STRUCTURES (*Either Term*)**

Prerequisites: ME 303 or ME 353, CE 401. (CE 401 may be taken concurrently.) (ME 384 or ME 386 is recommended.)

The theory of reinforced concrete design and analysis. This course includes a basic study of concrete as a material, laboratory investigations and demonstrations, and the design and analysis of conventional structural elements. The scope includes beams, continuous one-way and two-way slabs, eccentrically loaded columns, and footings. Ultimate strength theory is emphasized. The course finishes with an analysis and design problem which brings into play most of the material covered in the course. A small number of selected cadets taking this course in the first term may participate in a research project during the second term under Course CE 484, Individual Engineering Projects. Application of computers is included wherever appropriate. Emphasis is given throughout the course to the development of an understanding of the philosophy of engineering and the decision-making process.

*2.5 Credit Hours.*



## CE 482. ADVANCED STRUCTURAL ANALYSIS (*Second Term*)

Prerequisite: CE 401. (ME 384 or ME 386 is recommended.)

Continuation of the study of structural analysis (CE 401), mainly in the area of indeterminate structures. Methods of analysis appropriate to both the elastic and plastic theory are studied. Elastic theory methods include conjugate beam, virtual work, Castigliano's Theorem, method of least work, and moment distribution applied to structures with variable moment of inertia. Nuclear blast dynamic loads and numerical approximate analysis such as numerical integration of the beam differential equations and the finite differences method are considered. Matrix methods of structural analysis which are useful in computer solutions are introduced. Analysis and/or design problems are included to give a comprehensive review of the course. Throughout the course, emphasis is given to the development of an understanding of the engineering philosophy and the decision-making process.

*2.5 Credit Hours.*

## CE 484. INDIVIDUAL ENGINEERING PROJECTS (*Second Term*)

Prerequisite: CE 401.

The objective of this course is to permit the cadet to concentrate his study in an area of particular individual interest dealing with a specialized topic in military or civil engineering either within or outside the scope of the standard course, CE 401-402. The course is conducted on a small group or individual basis and consists of field trips, laboratory and classroom work and group discussion. The exact scope of the course of study will be established through discussion between the cadet and the Course Director. The course is presented so that the cadet is required to establish the definition of the problem and its parameters; to study the fundamentals involved; to organize his own plan of attack; to determine his laboratory procedure if laboratory work is involved; to analyse the problem; and to achieve a solution. Throughout, emphasis is given to the engineering decision-making process.

*2.5 Credit Hours.*



## Department of Military Hygiene

*Professor:* Col. J. H. Voegtly (Head of Department).

*Assistant Professor:* Capt. R. J. Summary.

The Department of Military Hygiene presents instruction to the cadets during their first two years at the Military Academy.

During the summer of the Fourth Class year, the cadet receives instruction in self and first aid, field sanitation and personal hygiene. In the academic portion of the Fourth Class year, the cadet receives instruction in the basic anatomy and physiology of the reproductive system and the effects of alcohol, tobacco and drugs.

During the Third Class summer training, the cadet receives instruction in the effects of the environment on units in the field and additional instruction in first aid with emphasis placed on the responsibility of the commander at small unit level.

## Department of Ordnance

*Professor:* Col. J. D. Billingsley (Head of Department).

*Associate Professors:* Col. R. W. Samz, Lt. Col. D. F. Burton.

*Assistant Professors:* Lt. Col. M. J. Herbert; Majs. J. R. Aker, L. F. Skibbie;  
Capts. J. H. Huff, H. E. Day, C. B. Donovan, D. R. Reinhard, D. S. Oberg,  
C. F. Buck.

*Instructors:* Capts. K. E. Lager, L. C. Ross, H. C. Puschek, S. L. Myers.

*Laboratory Officer:* C.W.O. J. B. Cullum.

### Standard Course

#### OE 401-402. ORDNANCE ENGINEERING

Prerequisites: EL 301, 304, 305 (PH 305); ME 301, 302, 303.

This course is designed to give the cadet experience in the application of previously studied scientific and engineering principles to weapon systems. Coverage is given to sources of energy such as chemical, electrical, and nuclear types; ballistics including electronic computers, weapon system components, trajectories, flight stabilization, servomechanisms, guidance, fuzes, and terminal effects; propulsion including the rocket, gas turbine, spark and compression ignition engines, power transmission, engineering materials, land and air locomotion; weapon system design study including the development of parameters for and the analysis and design of a proposed new Army weapon system. Integrated laboratory exercises are included.

8 Credit Hours (4 each term).



## Honors Course

### OE 451-452. HONORS COURSE IN ORDNANCE ENGINEERING

Prerequisites: Standing in top 10 percent of class. Permission of the Department.

The Honors Course for exceptionally capable cadets includes all topics listed for the standard course (OE 401-402). The cadet accelerates this study at a pace governed by his own individual capability. A minimum of one class per week is scheduled in lieu of regular class attendances. Teaching techniques normally used for graduate studies are employed, emphasizing individual study and research. The time gained is used to cover one or more advanced topics of cadet choice or an individual analytical and/or laboratory project, where approved.

8 Credit Hours (+ each term).

## Elective Courses

### OE 385. MANAGEMENT ENGINEERING (*Either Term*)

Prerequisite: MA 204.

An analytical approach to the development and application of management engineering techniques for effective work planning and control. Emphasis on the scientific method of analysis and its application in achieving effective use of resources, increased operational readiness of equipment, increased productivity of personnel, increased quality of work, and improved bases for decision-making. Development of techniques to include schematic models, engineering programming, statistical methods and economic analysis. Concurrent application of techniques to analyses of selected management problems and cases involving process and facilities planning, methods study and motion economy, work measurement and scheduling, inventory control, process control, and quality control. Term project involving analysis of cases selected from local post support activities.

2.5 Credit Hours.

### OE 481. AUTOMOTIVE ENGINEERING (*Either Term*)

Prerequisites: ME 301, 302, 303. (ME 303 may be taken concurrently.)

An integrated engineering course designed to stress the engineering approach in the analysis of vehicular engineering systems. After an introduction to the problem of land mobility, the course covers the detailed analysis of powerplants with their associated auxiliary systems, as well as power train and chassis components. The course is climaxed by the investigation of vehicle performance in terms of acceleration, power and load capacity both on hard surface roads and in cross country operation. An integrated laboratory is designed to prove the

theoretical analysis. Consideration is given to practical problems encountered by the U.S. Army in the field.

*2.5 Credit Hours.*

#### OE 482. INDIVIDUAL ORDNANCE PROJECT (*Second Term*)

Prerequisites: OE 401 or OE 451 and permission of the Department.

The objective of the course is to permit advanced or specialized study of scientific principles applied in the field of Ordnance Engineering. Study may include either or both theoretical or laboratory effort based upon a sound preparatory investigation in mathematics and/or the basic sciences. Conduct of course will be on an individual or small group basis. Exact scope of study to be established by consultation between the cadet and the Professor of Ordnance.

*2.5 Credit Hours.*

#### OE 483. ENGINEERING MATERIALS (*First Term*)

Prerequisites: CH 201-202; EL 305 (PH 305); ME 303.

The course provides an introduction to the properties and behavior of solid materials commonly used in engineering applications. Emphasis is placed on the structural and electronic characteristics which determine these properties. Coverage includes crystallography, atomic bonding and radii, solid solutions, equilibrium conditions and phase diagrams, rate reactions, elastic and plastic behavior, dislocation theory, thermal conductivity and specific heat, and the electrical conductivity of metals. Integrated laboratory periods include instruction in: x-ray diffraction, thermal analysis, metallurgical microscopy and specimen preparation, electron microscopy, photomicrography, and photographic darkroom techniques.

*2.5 Credit Hours.*

#### OE 487. OPERATIONS RESEARCH (*Either Term*)

Prerequisites: OE 385—Management Engineering and permission of Department.

Rigorous development of some fundamental techniques of operations research with emphasis on probabilistic methods and their applications to military operations and systems. Fundamental topics covered are: vector and matrix representation of operational situations; probabilistic models and stochastic processes; Markov chains and sequential decision processes; and game theory. Applications will include: stochastic service (queuing) systems; maintenance, replacement, and reliability; competitive models; and combat.

## DEPARTMENT OF PHYSICS AND CHEMISTRY

*Professors:* Col. D. G. MacWilliams (Head of Department) and Lt. Col. E. A. Saunders.

*Associate Professors:* Lt. Cols. L. O. Elsaesser, H. C. Fitz, W. J. Hoff, Jr., L. E. Radford, M. G. Sheffield.

*Assistant Professors:* Maj. C. H. Drexler, R. M. Elton, E. D. Frankhouser, R. L. LaFrenz, W. F. Reilly; Capts. J. F. Baur, J. C. Calvert, T. J. Connell, J. B. Hall, J. P. Huntingdon, W. R. Licht, R. N. Mathis, R. H. Miller, H. E. Soyster, G. E. Wien.

*Instructors:* Maj. W. A. Childs, J. C. Ferguson; Capts. J. A. Bishop, H. L. Briggs, C. H. Carmean, W. T. Cooper, E. J. Downing, W. J. Garcia, J. A. Gibbs, L. H. Hunt, J. P. Johnson, W. W. Kastenmayer, K. I. Kawano, R. D. Kittelson, F. W. Kulik, L. R. Martin, M. L. Miller, R. R. Mills, W. V. Murry, J. H. Ramsden, R. W. Riordan, P. W. Tomiczek, D. B. Williams, J. S. Willis; 1st Lt. R. L. Hobson.

### Standard Courses

#### PH 201. PHYSICS I

Prerequisite: None.

The first semester in a three-semester sequence of general and modern physics. This semester is devoted primarily to the fundamentals of mechanics. A laboratory program designed to develop an appreciation of scientific techniques and to illustrate fundamental physical concepts is an integral part of the course.

*4 Credit Hours.*

#### PH 202. PHYSICS II

Prerequisite: PHYSICS I.

The second semester in a three-semester sequence of general and modern physics. This semester is devoted primarily to the fundamentals of electricity, magnetism and optics. A laboratory program designed to develop an appreciation of scientific techniques and to illustrate fundamental physical concepts is an integral part of the course.

*4 Credit Hours.*

#### PH 303. PHYSICS III (Formerly PH 305)

Prerequisites: PHYSICS I AND II.

The third semester in a three-semester sequence of general and modern physics. This semester is devoted primarily to the fundamentals of quantum physics as applied to atoms, molecules, solids and nuclei. A laboratory program designed to familiarize the student with radiation detection and counting devices is an integral part of the course. It



includes experimental determination of decay constants and absorption coefficients.

*4 Credit Hours.*

## CH 201-202. GENERAL CHEMISTRY

Prerequisite: None.

A two-semester course in general college chemistry with particular emphasis on the fundamental concepts, principles, theories and laws of chemistry, to include an introduction to organic chemistry and radiochemistry. Integrated laboratory program includes practical exercises illustrating fundamental chemical theory discussed in the classroom and an introduction to qualitative analysis. Experiments stress investigative techniques, observation and interpretation of data and the drawing of conclusions from these data.

*8 Credit Hours (4 each term).*

## Advanced Courses

### PH 251. ADVANCED PHYSICS I

Prerequisite: None.

The first semester in a three-semester sequence of advanced classical and modern physics for selected students. This semester is devoted to the study of mechanics of particles and finite bodies. Vector and scalar fields and the effects of special relativity are introduced. A laboratory program designed to develop an appreciation of scientific techniques and to illustrate fundamental physical concepts is an integral part of the course. A number of extended laboratory exercises of a more sophisticated nature are also required.

*4 Credit Hours.*

### PH 252. ADVANCED PHYSICS II

Prerequisite: PH 251. (Selected students from PH 201 may be permitted to take this course.)

The second semester in a three-semester sequence of advanced classical and modern physics for selected students. This semester is devoted to the study of electromagnetic phenomena and the laws of electromagnetism (Maxwell's equations). The basic principles of physical optics are introduced. The laboratory program of PH 251 illustrating fundamental principles (including extended laboratory exercises) is continued.

*4 Credit Hours.*

### PH 353. ADVANCED PHYSICS III (Formerly PH 355)

Prerequisites: PH 251 and 252. (Selected students from PH 201 and PH 202 may be permitted to take this course.)

The third semester in a three-semester sequence of advanced classical

and modern physics for selected students. This semester is devoted primarily to the fundamentals of quantum physics as applied to atoms, molecules, solids and nuclei. The laboratory program of PH 251 and PH 252 is continued and includes radiation detection and counting devices, determination of decay constants and absorption coefficients.

*4 Credit Hours.*

#### CH 251-252. ADVANCED GENERAL CHEMISTRY WITH ANALYSIS

Prerequisite: None

A rigorous treatment of the fundamental principles of modern chemistry. Topics covered include elementary quantum theory, atomic structure, the chemical bond, gases, crystal structure, solutions, elementary thermodynamics, kinetics, equilibrium, descriptive chemistry of the elements, electrochemistry, ions, elements of organic and nuclear chemistry. Integrated laboratory program includes experiments of a quantitative nature which illustrate the fundamental concepts of chemistry and a series of semi-micro qualitative analysis exercises stressing equilibrium principles and solution chemistry of various elements.

*8 Credit Hours (4 each term).*

#### Elective Courses

##### PH 481. INTRODUCTION TO THEORETICAL PHYSICS I (*First Term*)

Prerequisite: MA 251 or MA 483.

A mathematical treatment of the fundamental laws, principles and concepts of classical mechanics including particle kinematics and dynamics, central force motion and scattering, rigid body motion and small oscillations using the LaGrangian formulation. An introduction to Hamiltonian mechanics is included.

*2.5 Credit Hours.*

##### PH 482. INTRODUCTION TO THEORETICAL PHYSICS II (*Second Term*)

Prerequisite: MA 251 or MA 483.

An intermediate course in electricity and magnetism covering electrostatics, magnetic fields, electromagnetic induction, Maxwell's equations, Poynting vector, electromagnetic properties of material media, physical optics and special relativity to include the field transformation equations.

*2.5 Credit Hours.*

##### PH 484. QUANTUM MECHANICS (*Either Term*)

Prerequisite: PH 303 or PH 353 (formerly PH 305 and PH 355).

An introductory course stressing the physical meaning of quantum theory to include: failure of classical theories; de Broglie waves, wave functions and eigenvalue problems; Schroedinger equation; free particle,

potential well, harmonic oscillator, hydrogen atom; operators; many electron atoms, Pauli principle.

*2.5 Credit Hours.*

#### PH 486. EXPERIMENTAL PHYSICS (*Either Term*)

Prerequisites: PH 303 or PH 353 (formerly PH 305 and PH 355) and one elective in Physics.

Individual advanced laboratory experiments selected by the student and performed under the supervision of a faculty advisor. Possible experiments include: normal modes of coupled systems, laser optics, Frank-Hertz, electron paramagnetic resonance, Zeeman effect, Mossbauer effect, mass spectroscopy and nuclear events.

*2.5 Credit Hours.*

#### PH 487. NUCLEAR REACTOR THEORY (*Either Term*)

Prerequisite: PH 303 or PH 353 (formerly PH 305 and PH 355).

A review of modern physics pertaining to reactor theory, radiation detection and health physics; neutron moderation; neutron cycle balance in homogeneous and heterogeneous systems; neutron diffusion; critical equation and critical size, short and long term transient effects, and stability. The laboratory portion of the course includes practical exercises in instrumentation and radiation detection; neutron activation and cross section determination; thermal diffusion and Fermi age; flux distribution buckling and critical size of the subcritical reactor.

*2.5 Credit Hours.*

#### PH 488. NUCLEAR PHYSICS (*Second Term*)

Prerequisite: PH 303 or PH 353 (formerly PH 305 and PH 355).

A study of selected topics in nuclear physics to include: Properties of the nucleus, radius, binding energy, angular momentum, magnetic moment, a quantum mechanical treatment of alpha decay and the deuteron; nuclear models, and basic nuclear reactions.

*2.5 Credit Hours.*

#### CH 481. PHYSICAL CHEMISTRY I (*First Term*)

Prerequisite: CH 202 or CH 252.

A course covering standard topics in physical chemistry such as: description of physicochemical systems, laws of thermodynamics, thermodynamics of chemical equilibrium, changes of state, solutions and phase equilibrium, kinetic theory, electrochemistry, reaction kinetics, colloids, and radioactivity. Selected laboratory experiments are performed using precision physical measurements to illustrate colligative properties, thermochemistry, ionic equilibrium, transference and con-

ductance, electrolysis and cell functions. Experiments using digital computer for automatic data reduction are included.

*2.5 Credit Hours.*

#### CH 482. PHYSICAL CHEMISTRY II (*Second Term*)

Prerequisite: CH 481.

A continuation of CH 481—Physical Chemistry I.

*2.5 Credit Hours.*

#### CH 483. ORGANIC CHEMISTRY I (*First Term*)

Prerequisites: CH 201-202 or 251-252, or validation thereof.

A comprehensive study of the compounds of carbon and the reactions of these compounds. Latest theories of chemical bonding are presented and applied to the main classes of organic compounds. Emphasis is placed on the relationship between structures and chemical reactivity. The course includes standard topics in organic chemistry, such as: hydrocarbons, ethers, alcohols, aldehydes, ketones, stereochemistry, optical isomerism and reaction mechanisms. Laboratory program includes application of modern instrumentation and the more typical reactions of functional groups and syntheses.

*4 Credit Hours.*

#### CH 484. ORGANIC CHEMISTRY II (*Second Term*)

Prerequisite: CH 483.

A continuation of CH 483 covering additional standard topics in organic chemistry, to include: aromatic, heterocyclic and polyfunctional compounds; proteins, carbohydrates, lipids and polymerization. Laboratory includes an introduction to qualitative organic analysis.

*4 Credit Hours.*

#### CH 489. CHEMISTRY RESEARCH PROJECT (*Either Term*)

Prerequisites: CH 481-482 and CH 483-484.

Individually supervised research in one or more of the specialized topics of chemistry. Research projects are approved by the Department and require the cadet to outline his approach, determine necessary laboratory equipment and evolve the techniques and procedures required. The project is completed by the writing of a research paper.

*2.5 Credit Hours.*

## DEPARTMENT OF SOCIAL SCIENCES

*Professors:* Col. G. A. Lincoln (Head of Department) and Col. A. A. Jordan, Jr.

*Associate Professors:* Lt. Cols. J. H. Buck, E. Denton, III, R. H. Nye (Permanent Associate Professor), W. W. Whitson (Executive Officer); Maj. L. D. Olvey (Permanent Associate Professor).

*Assistant Professors:* Lt. Col. J. W. Mann; Maj. W. S. de Camp, F. A. Hart, W. L. Hauser, H. W. Johnson, G. R. Phillips, F. J. Schober, J. F. Sloan, H. Twichell, M. B. Wier; Capt. J. O. Bradshaw, M. J. Collins (USAF), R. L. Grete (USAF), J. R. Murphy (USAF), K. W. Smith; Lt. J. R. Sisson.

*Instructors:* Lt. Col. J. L. Morrison; Maj. T. E. Carpenter, III, O. B. Combs, Jr., J. S. V. Edgar, E. R. Heiberg, R. W. Hobbs, J. R. Logan, D. G. Mead, W. E. Odom, A. A. Smith, W. M. Summers; Capt. J. L. Abrahamson, W. S. Barge, R. J. Brown, R. T. Chenoweth, F. W. Hall, D. E. Hrubby, C. P. Hutton, L. Parkus, R. J. Roller, J. O. B. Sewall, W. J. Taylor, W. A. T. Tuttle; Lts. K. J. Fedor, A. E. Fowerbaugh, R. E. Johnston, S. K. Smith; Mr. J. D. Rosenthal.

### SS 201. HISTORY OF EUROPE AND AMERICA: 1500 TO 1870

A survey of the major developments in the history of Europe since the Renaissance. Provides a foundation for further study of the institutions and issues of modern Western civilization. The central thread is political history, to which economic, intellectual and social developments are related, often through analysis of selected source readings.

*2.5 Credit Hours.*

### SS 202. HISTORY OF EUROPE AND AMERICA SINCE 1870

Continues the survey begun in SS 201, with increasing emphasis upon the internal development of the United States, and the growing interdependence of Europe and North America in their political and economic affairs.

*2.5 Credit Hours.*

### SS 301. ECONOMIC PRINCIPLES AND PROBLEMS (*Second Term*)

A survey course in basic economic principles providing for the application of these principles to specific problems of public policy in this and following courses.

*2.5 Credit Hours.*

### SS 302. UNITED STATES GOVERNMENT (*First Term*)

A study of the dynamics of U.S. politics, with emphasis on the processes, institutions, and problems of the national government, and including a survey of the basic aspects of state and local government. This course provides a conceptual framework of political science for later



courses. It also includes an integrated subcourse in Economics of National Security.

*2.5 Credit Hours.*

#### SS 401. CONTEMPORARY FOREIGN GOVERNMENTS

A comparative survey of the politics, political institutions, and problems of selected foreign countries, including Great Britain, France, West Germany, and the Soviet Union. Consideration is also given to current developments in the movement for the achievement of political unity in the European Community.

*2 Credit Hours.*

#### SS 403. HISTORY OF MODERN ASIA

A cultural-political study of China, Japan, and India, designed to characterize the traditional cultures and societies of each, to study the impact of the West on these traditional societies, and to analyze the resultant problems and issues of today.

*2 Credit Hours.*

#### SS 407. INTERNATIONAL RELATIONS

An interdisciplinary study of the world environment, building upon previous Social Sciences courses, with particular emphasis upon the nature of the forces changing the relationships among nations in the post-World War II era and on the role of the United States in world affairs. The theories and practices of interstate behavior are studied as well as the basic influences which condition the formulation and execution of U.S. foreign policy. The course terminates with an intensive study of a developing area with emphasis on U.S. policy. The areas studied include Middle East, Africa, Latin America, Southeast Asia.

*4 Credit Hours.*

### Elective Courses

#### SS 381. HISTORY OF RUSSIA (*First Term*)

Prerequisite: None.

A study of the historical development of the Russian nation and its relations with the Western world, with particular emphasis on the nature of the Russian Revolution, the regime which it produced, and the Communist Bloc as it presents a challenge to the West.

*2.5 Credit Hours.*

### SS 382. HISTORY OF UNITED STATES FOREIGN RELATIONS (*Second Term*)

Prerequisite: None.

A study of the record of U.S. diplomacy from the early period of isolation to the current pattern of global alliances and commitment to the Atlantic Community. The events of this record are examined with emphasis on the evolving nature and broad currents of the foreign policy of the United States.

*2.5 Credit Hours.*

### SS 383. MIDDLE EASTERN STUDIES (*Second Term*)

Prerequisite: None.

An introduction to the problems of the contemporary Middle East and North Africa. A brief consideration of the development of the Arab and Ottoman Empires and of penetration of the area by European states provides a foundation for an intensive study of the national political goals, social problems, and economic prospects of the present day.

*2.5 Credit Hours.*

### SS 384. LATIN AMERICAN STUDIES (*Second Term*)

Prerequisite: None.

A study of the historical developments of Latin America to include the traditional cultures, the impact of Europe and the United States, and the emergence and development of the independent states. From this historical base the dynamic of present-day change in Latin America is examined in terms of its economic, political and social-psychological aspects.

*2.5 Credit Hours.*

### SS 385. COMPARATIVE ECONOMIC SYSTEMS (*Second Term*)

Prerequisite: SS 301.

This course is a study in the political economy of Capitalism, Socialism, and Communism. Each of these is examined in terms both of its historical origins and evolution and of the way in which it functions. The principal emphasis is on teaching the conceptual tools which have been developed for understanding and evaluating economic systems, rather than a detailed description of particular national economies as they exist today.

The course draws on the experience of the American and Soviet economies as the major examples respectively of market and command economies.

An appraisal is made of the claims and problems of each system, with strong emphasis on the challenge of economic growth.

*2.5 Credit Hours.*

#### SS 386. POLITICAL PHILOSOPHY (*First Term*)

Prerequisites: SS 201 and SS 202.

An introduction to the classic writings of Western political thought, emphasizing the emergence and refinements of the concept of constitutional government and the ethical values and other theory which underlie that concept. Particular attention is paid to the universal applicability of the writings of the great philosophers and their relationship to the political problems of today.

*2.5 Credit Hours.*

#### SS 387, 487. SEMINAR IN PUBLIC POLICY (*First Term*)

Prerequisite: None.

This seminar affords cadets the opportunity to research and analyze in depth a major national or international public policy issue, using the annual national debate topic as the case study. Instruction is also provided in forensic and argumentation skills. Eligible cadets will normally be expected to enroll in this course.

*2.5 Credit Hours.*

#### SS 481. SEMINAR IN HISTORY (*First Term*)

Prerequisites: SS 201, 202.

A study of theories and methods used in the historical analysis of man's developing institutions, and ideas. The cadet reads representative works of eminent historians, studying their use of sources, interpretive philosophies, and styles. He then applies these ideas to an investigation of a suitable historical problem selected from the period of Western history under analysis by the Seminar. Seminar Topic of AY 1966-67: Man and Events in Contemporary Public Affairs. Honors arrangements will be made for selected cadets.

*2.5 Credit Hours.*

#### SS 482. APPLIED ECONOMIC THEORY AND DEFENSE ECONOMICS (*First Term*)

Prerequisite: SS 301.

This course combines economic theory and the economics of defense management. The central theme of the first portion is resource allocation in a market economy. The methods and tools of present day economic science are examined and used to explain the behavior of business and government under various market conditions. In the second part of

the course, the applications of economic analysis to defense decision-making are examined and the use of the nation's economic strength at different levels and types of security challenge is analyzed.

*2.5 Credit Hours.*

### SS 483. NATIONAL SECURITY PROBLEMS (*Either Term*)

Prerequisites: SS 301, 302.

Deals with two related aspects of national security: the process by which decisions bearing on national security are reached and the place of the professional officer in national security affairs. The course examines the interaction of the concepts of strategy with the organizational-procedural setting of pertinent institutions and with the political process which resolves conflicting domestic and foreign policy goals. Cadets take an educational trip to a research institution concerned with a broad array of security problems.

*2.5 Credit Hours (1st or 2d term).*

### SS 485. PROBLEMS OF THE DEVELOPING NATIONS (*Either Term*)

Prerequisites: SS 301, 302.

A study of the problems of economic development and political modernization as exemplified by selected Asian and African nations. The basic relationships between successful political and economic development on the one hand and social change on the other form the theme of the course. Such problem areas as the development of foreign policy in the new nations, the role of foreign economic assistance, the bases of insurgency, the strategies of local Communist parties, and the emerging political role of military leaders are analyzed. Cadets have the opportunity to discuss these developing areas with citizens of the nations concerned and with other experts.

*2.5 Credit Hours.*



Academic Computer Center



## ACADEMIC COMPUTER CENTER

*Director and Associate Professor of Computer Science:* Lt. Col. W. F. Luebbert.

*Deputy Director:* Lt. Col. H. W. Lombard.

*Assistant Director, Operations and Administration:* Maj. F. E. O'Brien.

*Assistant Director, Systems Analysis:* Lt. J. R. Mansi.

*Assistant Director, Academic Instruction:* Maj. J. R. Parker.

The Academic Computer Center is an academic facility, part of the Office of the Dean, supporting all academic departments and activities. The normal functions of the Center include conduct of instruction for cadet classes, as well as USMA Staff and Faculty courses; coordination of the overall Academic Computer Program; operation of the computing facility and reference library; and technical consultation with students and instructors. The Academic Computer Center trains instructors, assists academic departments in the actual conduct of instruction, provides a wide variety of instructor support and augmentation, monitors cadet special projects, and conducts research in the area of computer science education. Currently, about 7,000 cadet computer program solutions are processed each month and this number is still growing.

The Academic Computer Center is located in a newly constructed facility in Thayer Hall and consists of three modern computers, a communications processor, and three classrooms designed specifically to support cadet instruction. The Center also uses closed-circuit television and a wide variety of audio-visual aids, including a curve plotter and punched card equipment, to make instruction more effective.

The Center is open for cadet use 96 hours per week. Cadets who desire to operate the equipment individually may progress through a system of qualification which includes the award of appropriate qualification cards (gray or gold) and intermediate apprentice levels. Cadets who hold an unrestricted "Gold" Card (the highest qualification) may use the computer without supervision and when the Academic Computer Center would otherwise be closed.

USMA has an interdisciplinary Academic Computer Program designed to accomplish three major goals which are briefly stated as follows:

1. To acquaint each cadet with the capabilities, limitations, and potential of the computer as an increasingly important military tool.
2. To equip each cadet with the ability to perform complex computations rapidly and accurately through intelligent use of the computer.
3. To increase the effectiveness of instructors through judicious

use of the computer in a variety of academic disciplines, and in many classroom and laboratory situations.

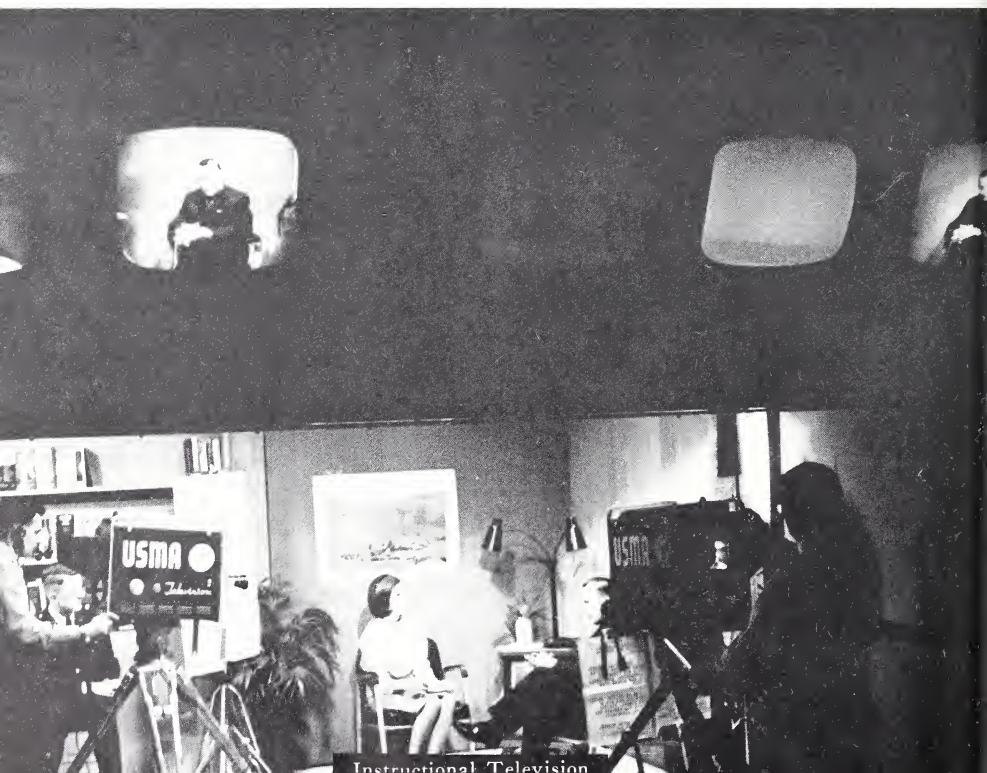
Most cadet instruction in the operation and programming of digital computers occurs during freshman year in courses taught by the Departments of ES&GS and Mathematics. Each cadet receives instruction in programming computers in two languages. The first of these is a machine-oriented language specifically designed to support instruction at USMA. The second is a procedure-oriented language called CADET-RAN (a dialect of FORTRAN II). It is during freshman year that the cadet learns to operate the computer itself to gain that intellectual impact which results from personal contact with the equipment. In Mathematics, the freshman cadet begins a series of 5 computer problems, which emphasize fundamental mathematical concepts. This basic knowledge is extended through continued computer use in several disciplines. The Department of Physics and Chemistry uses the computer as a data reduction tool. The Department of Ordnance includes comparison of analog and digital computer solutions in its Ordnance Engineering and Management courses. The Departments of Electricity, Mechanics, and Military Art and Engineering encourage cadet computer use. Several elective courses allow cadets with particular aptitude, skill and desire to explore computer science in depth.

The use of the computer extends into areas outside of the sciences, such as psychology, tactics, and social sciences. For example, computer-trained cadets have programmed judge selection procedure and selection and matching of teams for the National Debate Tournament held annually at West Point. Other cadets have written Social Science term papers on such topics as analysis of voting trends, and stock market pattern analysis, using the results of computer analyses of large volumes of data as a starting point in the logical development of their basic thesis.

Major emphasis is given to using the computer as an in-class instructional tool in teaching non-computer subjects. In support of this objective, a time-sharing system is now undergoing field test and should go into full operation by September 1966. This system will provide remote access to the computers, thus enabling users to send programs from and receive answers at locations convenient to them, but remotely located from the actual computers themselves. Initially, these terminals will be used to support classroom and laboratory instruction.







## INSTRUCTIONAL TELEVISION CENTER

*Director and Associate Professor:* Lt. Col. William F. Luebbert.

*Deputy Director and Television Operations Officer:* Maj. Frank B. Tennant, Jr.

*Production Chief:* Mr. Jack A. Petersen.

Television at West Point is a medium of communications used to supplement and enrich small-group personalized classroom instruction. The effectiveness of televised instruction, like that of classroom instruction, is measured in terms of learning. Other matters such as the personality of instructors and the design of props and charts are given proper consideration, but are secondary to the basic objective of instructional television: to present subject material in the manner most conducive to learning.

The Instructional Television Center is the nucleus of all television activity at the Military Academy. The Center plans, manages, schedules, and operates the closed circuit television system and trains instructors in the techniques of television teaching. The Center also assists the academic departments and the Department of Tactics by teaching specific topics and providing assistance for special classes, sub-courses and cadet projects.

The studio and control rooms of the Instructional Television Center are newly constructed and are provided with the newest and most modern equipment, including three professional vidicon studio cameras, three videotape recording and playback machines, a 16-mm motion picture and 35-mm slide television film chain, and the latest in lighting, audio, switching, and test equipment. A four channel television distribution system carries the instructional programs by coaxial cable to all of the classrooms of Thayer Hall and Bartlett Hall, to the Academic Computer Center, and to the Library. Classrooms are equipped with 23-inch television receivers. Large screen television projection devices are installed in the large auditoriums of Thayer Hall, and in the large lecture halls of Bartlett Hall. The distribution system will be extended to Washington Hall, the new gymnasium, and cadet barracks study rooms, which are now under construction.



## THE LIBRARY

*Librarian:* Mr. Egon A. Weiss.

*Assistant Librarian:* Mr. William G. Kerr.

*Chief, Readers' Services Division:* Miss Ann K. Harlow.

*Reference Librarians:* Mr. Robert G. Bidwell (Science).

Mrs. Katherine de Dory (Languages).

Miss Irene Feith (Documents).

Mr. John A. Parker (Audio-Visual).

Mr. James E. Pearson (Military History).

Miss Theresa E. Taborsky (Bibliography & Periodicals)

*Chief, Special Collections Division:* Mr. J. Thomas Russell.

*Archivist:* Mr. Joseph M. O'Donnell.

*Asst. Archivist:* Mr. Kenneth W. Rapp.

*Chief, Technical Services and Acquisitions:* Mr. James H. Conway.

*Order Librarian:* Miss Catherine T. McGuinn.

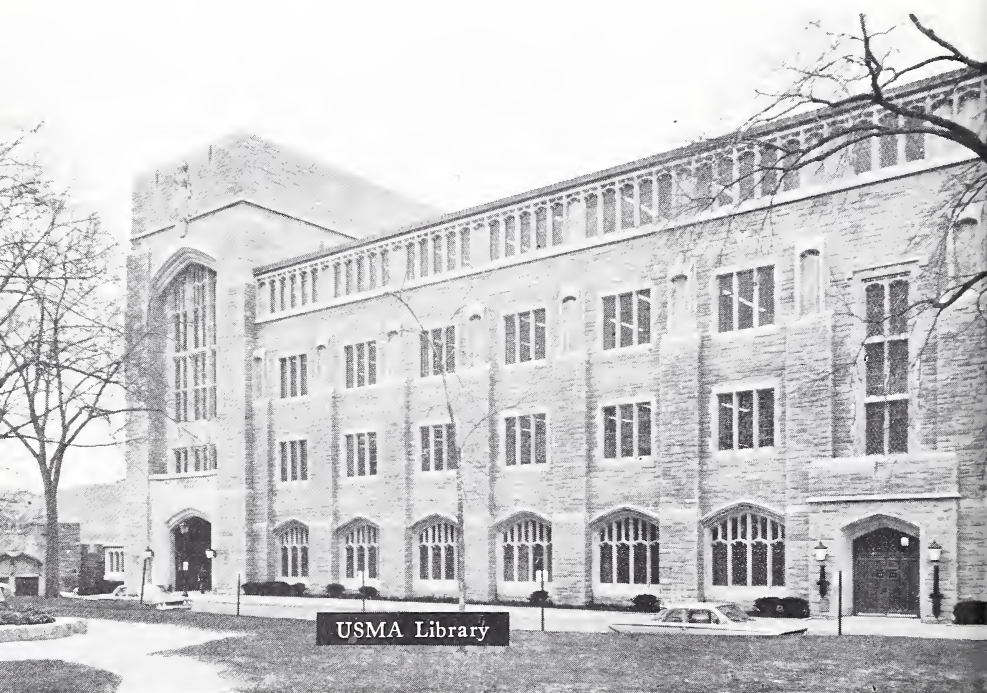
*Catalog Librarians:* Miss Elizabeth K. Dunn.

Mr. Pingkun Lee.

Miss Anna E. Pierce.

Mrs. Salvatore Sciascia

Miss Marion B. Wellar.





The West Point Room

### The West Point Room

The library book collection contains approximately 250,000 volumes. The library building has a storage capacity for 500,000 volumes and provides seating for over 1,000 readers. Current subscriptions include 1,100 periodicals and 40 newspapers, domestic and foreign. Microfilm and microcard readers and printers are available in sufficient number to make possible effective use of the library's expanding microfilm holdings. The audio-visual resources include approximately 3,000 disc records and tapes of linguistic materials, drama, poetry, classical and popular music. Audio booths are equipped for stereophonic listening and recording. In addition, visual materials are available in form of prints, slides, drawings and mounted and unmounted pictures.

The library is designated a partial depository for the publications of the United States government. United Nations, NATO, SEATO and regional publications are housed in the documents room of the library.

The library book collection represents the first federal library and antedates the founding of the Academy in 1802 by almost a quarter of a century. The first substantial acquisitions for the library were made between 1815 and 1817 when Major Sylvanus Thayer, Superintendent USMA, 1817-1833 on an official journey to Europe, was authorized

by Secretary of War James Monroe to purchase landmark texts in the arts and sciences. Major Thayer obtained about 1,000 volumes which formed the basis for early engineering education in the United States.

The present library resources are similar to those of a liberal arts college and reflect considerable strength in the mathematical, scientific, and technical subjects. The library's extensive holdings in the areas of military art, history and technology have established its reputation as an important military research library.

The USMA Archives maintains cadet and the Military Academy's administrative records. The library's Special Collections include extensive manuscript and archival holdings which are concerned primarily, though by no means exclusively, with the history of the United States Army, the Military Academy and persons of the military profession. The collection of early American military art imprints is unique.

Cadets have free access to the library stack areas; oral and written instructions guide them in the use of catalogs, bibliographies and other reference resources. The facilities of the library are also available to individuals engaged in research. During the Academic Year the library is open from 7:00 A.M. on weekdays and from 2:00 P.M. Sundays to 10:00 P.M. The Special Collections Division, including the USMA Archives, is open from 8:00 A.M. to 4:30 P.M. Monday through Friday.

## MILITARY PROGRAMS

### MISSION

To develop the qualities and attributes of leadership with emphasis on character as exemplified by integrity, morality, discipline and a strong sense of duty and responsibility.

To provide a broad basic military education.

To develop high standards of physical fitness.

To instill the motivation essential to the profession of arms and to provide orientation for a career in the United States Army.

Military instruction concentrates on the fundamental concepts of tactics, study of leadership techniques, training in physical education, and indoctrination in career planning and motivation. It provides study, practice and orientation in the history, materiel, methods, and techniques of the Army and the other services of the Armed Forces of the United States. With this background the graduate has the foundation necessary for his progressive and continued development throughout his career as an officer of the Regular Army.

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## TYPICAL DAILY SCHEDULE

### MORNING:

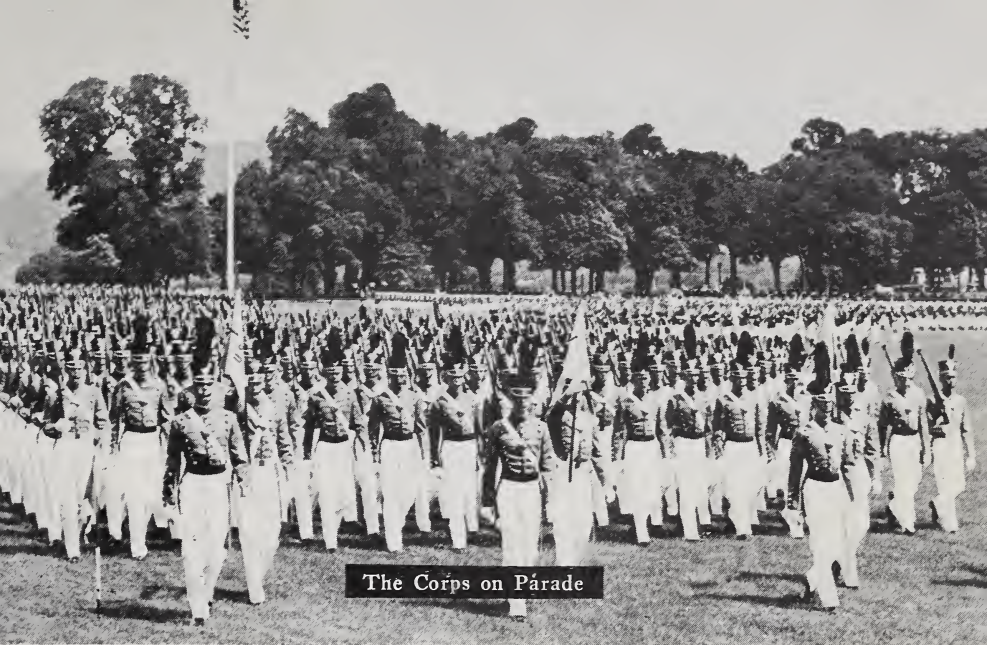
6:00	Reveille
6:30- 7:10	Breakfast
7:45- 9:00	Class
9:00-10:30	Study Time
10:30-11:50	Class
12:10-12:50	Dinner

### AFTERNOON:

1:05- 2:05	Class or study
2:15- 3:15	Class or study
3:35- 4:50	Intramural or intercollegiate athletics
4:50- 6:30	Study time, parades, intercollegiate athletics or extracurricular activities
6:30- 7:15	Supper
7:20- 9:35	Study time
10:00	Taps. Late lights authorized for study purposes.

The schedule shown above is a typical daily schedule for a cadet during the academic year, September through May. Cadets also attend classes on Saturday morning. During the summer months, June through July, cadets take leave for approximately one month and devote the remaining time to military training.





The Corps on Parade

## THE UNITED STATES CORPS OF CADETS

### Organization

The student body at West Point is called the United States Corps of Cadets. The approximately 3,100 cadets of the Corps are organized into a brigade of four regiments. A cadet regiment consists of two battalions containing three companies, for a total of 24 companies in the brigade. Cadets of all four classes are assigned to each company, giving each company a strength of approximately 130 cadets.

The officer and senior noncommissioned officer positions within the cadet brigade are filled by cadets selected from the First (senior) Class. In command of the brigade is the Cadet Brigade Commander (Cadet First Captain) who has a staff consisting of a Brigade Executive Officer, a Brigade Adjutant, a Brigade Operations Officer, a Brigade Supply Officer, and a Brigade Activities Officer. The four cadet regimental commanders and eight cadet battalion commanders have staffs similar to that of the Brigade Commander. A cadet company commander is in charge of each company with subordinate cadet officers and noncommissioned officers in charge of smaller units.

## **Pay and Allowances**

Cadets are members of the Regular Army and receive one-half of the basic pay of a Second Lieutenant with under two cumulative years' service. This, under current pay rate, is \$151.95 per month, from which they must pay for their uniforms, textbooks, and incidentals. Quarters, rations, and medical care are provided. The pay and allowances received are adequate to cover all expenses.

## **Appointment Upon Graduation**

When a cadet has completed the course of instruction and meets required standards, he is, upon graduation, appointed a Second Lieutenant in the Regular Army of the United States.

The Aptitude for the Service System functions in accord with the basic responsibility of the Academy to produce officer leaders for the Armed Forces. The system assists in the maximum development of the leadership capabilities of each cadet and insures that graduates meet the standards required by the Army. The procedures of the system provide for evaluation of the leadership potential of each cadet, counseling and guidance in those areas in which any weakness is detected, and separation of any cadet who proves incapable of achieving the required standard of leadership.

The evaluation of cadet leadership is accomplished primarily through a program of ratings by officers and cadets. Twice a year each cadet rates all cadets of his company who are in his class or lower classes. The ratings are made by arranging the cadets in each class within the company in order of merit based on observed leadership ability.

In addition to the ratings by other cadets, each cadet is similarly rated by his Company Tactical Officer. The rating by the Tactical Officer is an extremely important one since this officer has been selected for his job because of proven leadership ability. It is he who has studied carefully the cadets in the company and has counseled and advised each cadet.

A relative standing in Aptitude for the Service for each cadet is established by mathematically combining the ratings of the Tactical Officer and cadets. The cadet standings are not published, but the cadet and his parents are informed of his general ranking within the class. The objective ratings are supplemented in certain instances by descriptive comments regarding performance of specific duties and overall potential.

The Tactical Officer plays a key role in the counseling and guidance phase of the system. With each cadet he conducts a series of interviews in which he discusses any weakness shown, along with its probable cause, and counsels him in the means of improvement.

If over an extended period of time the cadet appears incapable of overcoming his deficiency and attaining the leadership standards required, his records are carefully studied by a board of senior officers of the Department of Tactics. The board interviews the cadet and such other cadets and officers as necessary for a thorough evaluation of the case.

The board may recommend that a cadet be declared proficient or deficient. The Commandant reviews the proceedings of the Aptitude Board and refers those cases involving deficiency to the Superintendent for action by the Academic Board wherein they are handled in the same manner as deficiency in an academic subject. A cadet found deficient in Aptitude for the Service by the Academic Board may be placed in a conditioned status until the next rating or he may be separated. All cases involving separation are referred to the Department of the Army for final approval.

Deficiency in Aptitude for the Service does not mean that a young man is unsuited for a successful career in life. It does mean that in the considered opinion of his officer supervisors and his fellow cadets he is not suited for a career as an officer of the Army.

## DEPARTMENT OF TACTICS

*Commandant of Cadets:* Brig. Gen. R. P. Scott.

*Aide-de-Camp:* Lt. M. R. Nawrosky.

*Deputy Commandant:* Col. J. G. Wheelock, III.

*Brigade Staff:* S1: Lt. Col. W. J. Love; *Assistants:* Maj. R. G. Vander Meer, Capt. M. S. Sirkis; *Personnel Officer:* CWO O. S. West; *Operations Officer:* Lt. Col. F. J. Sheriff; *Assistant:* Maj. L. J. Flanagan (Ret.); S4: Lt. Col. R. L. Smith, Jr.; *Assistant:* Capt. P. N. Walker; *CAO:* Maj. J. G. Donahue; *USAFA Exchange Officer:* Capt. I. A. Beauchamp, Jr.; *USNA Exchange Officer:* Maj. R. E. Glasgow; *The Royal Military Academy, Sandhurst Exchange Officer:* Maj. J. W. Foss, II; *USMA Exchange Officer From RMA, Sandhurst:* Maj. P. S. Field, MC, British Army (assigned to Office of Military Instruction).

*First Regiment: Commanding Officer:* Col. G. K. Maertens; *Executive Officer/S3:* Lt. Col. J. C. Donovan; *S1/S4:* Maj. F. K. Ware, Jr.; *Tactical Officers:* Maj. D. F. Maurer, Maj. R. E. Adams.

*Second Regiment: Commanding Officer:* Col. A. J. Hughes; *Executive Officer/S3:* Lt. Col. W. J. Love; *S1/S4:* Lt. Col. R. A. Cheney; *Company Tactical Officers:* Maj. C. F. Bliss, III, Maj. J. J. Cook, Jr., Capt. C. A. Glenn, Maj. E. E. Fuller, Jr., Capt. L. E. Bennett, Capt. W. L. Weihl.

*Third Regiment: Commanding Officer:* Col. J. W. Morris; *Executive Officer/S3:* Lt. Col. W. A. Ross; *S1/S4:* Maj. W. H. Gilbert; *Company Tactical Officers:* Maj. J. E. Fleeger, Capt. R. L. Hull, Maj. F. C. Adams, Capt. N. S. Krawciw, Maj. J. W. Nicholson.

*Fourth Regiment: Commanding Officer:* Col. H. J. Schroeder, Jr.; *Executive Officer/S3:* Lt. Col. R. G. Yerks; *S1/S4:* Maj. P. W. Lash; *Company Tactical Officers:* Maj. R. G. Vander Meer; Maj. W. M. Le Hardy; Capt. R. C. Beyer, USAF; Capt. A. D. Johnson.



## OFFICES OF INSTRUCTION

### OFFICE OF MILITARY INSTRUCTION

*Director:* Col. W. J. Ray.

*Deputy Director:* Lt. Col. C. C. Jacobson.

*Plans Branch O:* Maj. C. Alderman, Jr.; *Asst. Plans O:* Maj. W. T. Parks, Capt. J. W. Ray.

*Career Branch: Chief:* Lt. Col. M. J. Hanna; *Sr Armor Instr:* Capt. J. Mason; *Sr Artillery Instr:* Lt. Col. J. J. Coghlan, Jr.; *Sr Engineer Instr:* Maj. C. J. Fiala; *Sr Infantry Instr:* Maj. J. D. Foldberg, Jr.; *Sr Signal Instr:* Maj. W. D. Renner; *Instructors:* Capt. R. E. Thomas, Capt. E. E. Cross, Capt. C. A. Teague.

*Military Science Branch: Chief:* Lt. Col. R. C. Diehl; *Instructors:* Maj. J. E. Fleeger, Maj. J. N. Ellis, Maj. F. Zimolzak, USMC; Maj. P. S. Field, British Army; Maj. R. A. Rachek; Capt. R. G. Moscatelli, Capt. R. T. Hatcher, Capt. L. G. Gibbings.

### FOURTH CLASS MILITARY INSTRUCTION

#### *Summer*

#### FOURTH CLASS SUMMER TRAINING

The summer period consists of basic military training in preparation for military life and orientation and indoctrination in duty and honor. This period in New Cadet Barracks is one of intensive fundamental military training to include qualification with the U.S. Army rifle and basic individual training designed to prepare the new cadet to take his place in the Corps when it reassembles late in August.

*7.5 Weeks. Ungraded.*

#### *Academic Year*

#### MILITARY SCIENCE I

#### MI 101. FUNDAMENTALS OF MILITARY SCIENCE

Instruction in tactical principles as applied to platoon level operations to include military organization, small unit tactics, and troop leading procedures.

*.5 Credit Hour.*

## 144 MILITARY PROGRAMS

## MI 102. MAP READING

Instruction in the basic techniques of map reading.

*1 Credit Hour.*

### *CAREER TRAINING I*

## MI 105. MILITARY HERITAGE

Instruction designed to develop in the cadet an appreciation of the history and traditions of the profession of arms and to instill a pride in that profession and secondarily, to broaden his cultural background in military art.

*1 Credit Hour.*

## THIRD CLASS MILITARY INSTRUCTION

### *Summer*

### THIRD CLASS SUMMER TRAINING

To teach the capabilities, limitations and methods of tactical employment of the rifle squad, the infantry and mechanized infantry rifle platoons, the tank and armored cavalry platoons, the artillery battery and those combat engineer and combat signal units integral to the basic combined arms team; to add to, and improve upon, the basic and advanced individual soldier skills with emphasis on night training and techniques of land navigation; to provide familiarization firing of selected individual and crew served weapons organic to and in support of the basic combined arms team; to provide RECONDO (ranger type) training in patrolling, mountaineering, hand to hand combat and survival techniques; to develop an understanding of, and appreciation for, unit teamwork and the responsibilities of leaders at squad, section and platoon level; to develop and maintain a high state of physical condition; personal appearance, self-confidence, and esprit; and to instill a positive attitude toward duty with emphasis on preparing the Third Class to assume responsibilities as upperclassmen and future officers.

*7.5 Weeks. Ungraded.*

### *Academic Year*

### *MILITARY SCIENCE II*

## MI 201. COMPANY COMBINED ARMS TEAM

Instruction designed to familiarize the cadet with the mission and structure of the Armed Forces and the basic operational concepts of the U.S. Army.

*1.5 Credit Hours.*

## MI 205. MISSION AND STRUCTURE OF THE ARMED FORCES

Instruction designed to familiarize the cadet with the mission and structure of the Armed Forces and the basic operational concepts of the U.S. Army.

### SECOND CLASS MILITARY INSTRUCTION

#### *Summer*

#### SECOND CLASS SUMMER TRAINING

(1) A 2½ weeks period during which time the cadet receives further orientation on the roles, missions, and organization of other services; practical application of methods of instruction training to include physical training, instructor techniques, small arms refresher training, and a review of map reading techniques.

(2) One month duty as a platoon leader with a combat unit of the U.S. Army, or as a squad leader during New Cadet Barracks.

*Ungraded.*

#### *Academic Year*

#### MILITARY SCIENCE III

## MI 301. BATTALION COMBINED ARMS TEAM

Tactical instruction in the organization and basic principles of offensive and defensive combat employed by the ROAD Battalion and Combined Arms Team.

*1.5 Credit Hours.*

## MI 302. BATTALION COMBINED ARMS TEAM, SPECIAL OPERATIONS

Instruction in the basic principles of employing the ROAD Battalion Combined Arms Team on the nuclear and non-nuclear battlefield to include special operations in airborne, airmobile, and river crossing operations.

*1 Credit Hour.*

#### CAREER TRAINING

## MI 305. CAREER III

An introduction to career planning to include the challenge of the profession of arms, career benefits, and branch selection considerations.

*Ungraded.*

## FIRST CLASS MILITARY INSTRUCTION

### *Summer*

#### FIRST CLASS SUMMER TRAINING

(1) To provide an orientation on the roles, tactics, techniques, equipment, and new developments in Infantry, Armor, Artillery, Signal and Engineers through a two and one-half week orientation trip to selected military posts.

(2) One month duty either as a platoon leader with a combat unit of the U.S. Army for cadets who did not receive this type training in Second Class Year, or at command and staff levels during New Cadet Barracks or Camp Buckner.

### *Academic Year*

#### MILITARY SCIENCE IV

##### MI 401. U.S. ARMY IN THE COLD WAR

Instruction in the tactics, techniques and employment of the U.S. Army in Cold War Operations.

*1 Credit Hour.*

##### MI 405. FOREIGN ARMIES

Instruction to acquaint the cadet with the organizations and capabilities of major foreign armies.

*Ungraded.*

##### MI 403. COMMON SUBJECTS BRANCH TRAINING

General orientation on the duties of a junior officer in those subjects which are not related to a particular branch.

*.5 Credit Hour.*

#### CAREER TRAINING

##### MI 400. CAREER IV

Guidance on personal affairs and career planning designed to assist in making the transition from cadet to junior officer. To prepare the cadet for his immediate decisions concerning branch selection, uniforms, automobile purchasing, travel, and the first duty station.

Branch-oriented instruction designed to assist in preparing the cadet to assume the duties of a junior officer in his first unit.

*Ungraded.*

## OFFICE OF MILITARY PSYCHOLOGY AND LEADERSHIP

*Director:* Col. S. H. Hays.

*Associate Director:* Lt. Col. P. J. Hickey.

*Assistant Directors:* Majs. W. J. Livsey, Jr., W. N. Thomas, T. A. Rehm, D. M. Malone.

*Research Officer:* Maj. D. J. Tobin.

*Instructors:* Majs. J. B. Mallonee, Jr., H. C. Walters, R. T. Zargan, Q. C. Snyder, R. L. Salvador, J. C. Burris, W. H. Eisenhart, N. A. Ste Marie; R. H. Marcum; Capts. J. J. Cortez, V. B. Sones, C. R. Russell, E. B. Wilson; Lt. F. Luthans.

### PL 202. GENERAL PSYCHOLOGY

A general psychology course designed to give the cadet a basis for a continuing understanding of human behavior from a behavioral science view. Basic concepts of general psychology are studied with emphasis on the relation of these concepts to the cadet as a student and to his future role as a military leader. The course considers human development and individual differences, perception, learning, thinking, motivation and emotion, adjustment, personality, social relationships, leadership and applied psychology.

*2.5 Credit Hours.*

### PL 401. MILITARY LEADERSHIP

An interdisciplinary approach to the study of leadership as a phenomenon of human behavior. The course is concerned with a consideration of the factors which affect leadership and the process involved in its exercise by military commanders. The concept employed recognizes the moral, philosophical, and behavior foundations of military leadership and views the process as a dynamic interaction involving the leader himself (with his own personality), the group (with its particular characteristics and needs), and the situation (in which the leader and his group are operating).

In classroom exercises the cadet analyzes military leadership situations requiring an appreciation of human relations, group dynamics and a knowledge of the functions of military management and personnel management. Other instructional techniques include group discussion, role playing, the use of films, audio tapes and closed circuit TV, and oral and written reports on group and individually assigned projects. Guest seminar moderators noted for their contributions as scholars or practitioners in the field of leadership supplement classroom instruction, and lectures by prominent military leaders provide practical illustrations of the successful applications of leadership.

*2.5 Credit Hours.*

## 148      MILITARY PROGRAMS



## METHODS OF INSTRUCTION

### *Third Class*

A training course in the personal and professional qualifications required of a military instructor. Emphasis is placed on practical application in supervised presentations by each cadet of a military lesson, critiques, impromptu presentations and a 30-minute outdoor class on a military skill. Included are theoretical instruction and practical application of the principles of learning and training methods. This involves preparation, presentation, communication of information and skills, purposes and types of examinations, conduct of critiques, management and supervision of instruction and selection and design of training aids.

## Elective Courses

### PL 481. MANAGERIAL PSYCHOLOGY

Prerequisite: PL 202.

A course of study from selected areas of industrial relations and personnel psychology which covers human factors relevant to the functions of management. The course covers selection, placement and training of workers; job analysis and evaluation; motivation and morale; conditions of work and productivity; labor-management relations; and other problems of human behavior pertinent to large modern organizations. One term paper dealing with organization, management techniques, social processes, or industrial relations is required of each cadet enrolled.  
*2.5 Credit Hours.*

### PL 482. SOCIOLOGY: SOCIETY AND CULTURE

Prerequisite: PL 202.

This is an introduction to sociology as the study of society and culture. The course begins with the evolution of man and culture, and the influence of geography and population. The basic components of a social system are then identified—status and role, small groups and large organizations, such institutes as religion, economic systems, and the political order. Finally, the dynamic elements of society are considered in a survey of public opinion, social movements, and revolutions. The course includes material from both sociology and anthropology. American society is emphasized in a humanistic perspective. One term paper is required in which the cadet applies sociological concepts to a selected aspect of Academy life.

*2.5 Credit Hours.*

PL 483. AMERICAN MILITARY INSTITUTIONS AND MANPOWER  
(*Second Term*)

Prerequisite: May be taken by any 1st or 2d Classman at any time.

American military organization is studied as an element of the larger society. By a comparative analysis of the military organization of other societies, distinctive cultural features are identified which tend to create or accentuate specific institutions, such as recruitment methods, status systems, skill structures, and leadership patterns. Each of these institutions is considered in detail with reference to American society. The quantity and quality of human resources available for military service is studied in terms of population trends, social stratification, and the increasing comparability of military and civilian skill structures. Related topics include the changing function of the reserve components, the management of marginal personnel, relations between the military base and host community, civic action, the relations between public opinion and military organization. The course is sociological in orientation.

*2.5 Credit Hours.*

## OFFICE OF PHYSICAL EDUCATION

*Professor and Director:* Col. F. J. Kobes, Jr.

*Deputy Director:* Lt. Col. W. R. Gossett.

*SI:* Maj. B. A. McDonald.

*Coordinator of Instruction:* Maj. W. F. Weafer.

*SA:* Maj. R. J. Herte, Jr.

*Bldg & Gds:* Capt. W. D. Mead.

*Associate Directors:* Dr. L. O. Appleton, Dr. A. C. Werner, Mr. J. B. Kress, Mr. H. J. Kroeten, Mr. R. E. Sorge.

*Assistant Directors:* Messrs. L. A. Alitz, W. F. Lewis, G. W. Linck, R. S. Baggett, J. M. Palone.

*Instructors:* Maj. M. A. Clapp, Maj. R. G. Cardillo, Maj. J. J. Burcham, Maj. C. J. Garvey, Capt. J. L. Anderson, Capt. R. Degen, Capt. R. J. Keating, Capt. T. J. Mortensen, Lt. S. G. Truesdell, Lt. D. M. Parker, Mr. B. E. Gibson.

Physical Education courses are designed to increase muscular strength, power, endurance, cardio-vascular endurance, fundamental coordination, balance and flexibility; to enhance mental health and efficiency; and to develop the personal requisites necessary for military effectiveness and leadership.

### Standard Courses

#### PE 101-102. FOUNDATIONS IN PHYSICAL EDUCATION

Emphasizes the development of basic physical ability through instructional participation in boxing, gymnastics, swimming, wrestling, golf, and tennis interspersed with physiology and hygiene lectures. Additional participation is required in two competitive sports by season. Standards of physical performance must be met.

*3 Credit Hours.*

#### PE 201-202. SPORTS ORIENTATION

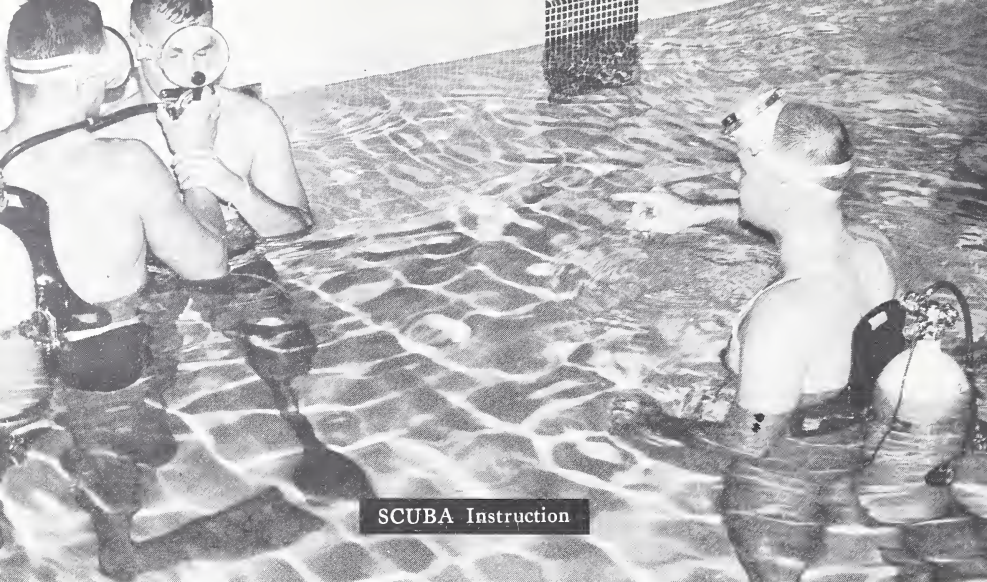
The objective of this course is to foster carry-over sports skills. It includes instruction and experience in conducting calisthenics. In addition, one season each in two additional competitive sports is required. Physical performance standards must be met.

*1.5 Credit Hours.*

#### PE 301-302. SPORTS LEADERSHIP

This course places emphasis on leadership instruction and experience. Further instruction is given in sports skills, instructor preparation, coaching techniques, and athletic coaching experiences. The requirement requires experience in two additional competitive sports either as a player, coach, or official. Standards of physical performance must be met.

*1.5 Credit Hours.*



SCUBA Instruction

#### PE 401-402. LEADERSHIP AND ADVANCED ATHLETIC SKILLS

Emphasis is placed on instructor and leadership training through administration of third and fourth class summer physical training programs.

Instruction for further expansion of the individual repertory of individual and team sports to include golf, tennis, squash, handball, SCUBA, volleyball, and personal conditioning; increased emphasis on carryover athletic skills which promote fitness.

Athletic participation, as listed under PE 101-102. Responsibilities of administering, coaching, and officiating in the intramural program.

*1 Credit Hour.*

#### Additional Courses

A special program of weight control and reconditioning, basic swimming, voluntary conditioning, and a posture clinic to assist those who experience difficulty in achieving minimum standards of proficiency. Open to all classes.

*Ungraded.*

#### *Spring Athletic Participation*

With the same objectives as stated in PE 101-102, the spring program offers player competition in intercollegiate sports of baseball, lacrosse, golf, tennis, track, pistol, and rifle, or voluntary competition in the spring intramural program consisting of military boating, cross



country, lacrosse, softball, and tennis. Approximately 89 percent of the Cadet Corps participates in this program.

*Ungraded.*

### *Annual Physical Fitness Tests*

Physical Fitness Tests and Physical Ability Tests, including Obstacle Course Runs, conducted in fall and spring of each year for all cadets. Graded under PE 101-102, 201-202, 301-302, and 401-402.



Intramural Competition



## LECTURE PROGRAM

### 1965-1966

Lectures sponsored by the various activities at the Military Academy are coordinated by the Dean of the Academic Board. In almost every case the lecture is an integral part of the course of instruction of the attending class or classes.

A partial list of the visiting lecturers for the first semester of Academic Year 1965-66 is shown below. At the time of preparation of this list, the complete lecture program was not available.

#### DEPARTMENT OF ENGLISH

Mr. John Fischer, Editor-in-Chief, *Harper's Magazine*, "Importance of Writing Ability to the Military Officer." (Fourth)

#### DEPARTMENT OF MECHANICS

Brig. Gen. Harvey R. Fraser, USA (Ret.), Dean of Engineering, South Dakota School of Mines and Technology, "The Hot Body." (Second)

Maj. Frank Borman, Astronaut, NASA, Manned Space Flight Center, Houston, Texas, "American Manned Lunar Landing Program." (Second)

#### DEPARTMENT OF ORDNANCE

Mr. Harold S. Stratton, Rocketdyne Division, North American Aviation, Canoga Park, California, "Liquid Rocket Engines." (First)

Mr. Ronald Liston, Detroit Arsenal, "Land Locomotion." (Selected First Classmen)

#### DEPARTMENT OF PHYSICS & CHEMISTRY

Dr. Lawrence K. Akers, Chairman, Special Training Division, Oak Ridge Institute of Nuclear Studies, Oak Ridge, Tennessee, "Interaction of Nuclear Radiation of Matter." (Selected First, Second and Third Classmen)

Col. Kenneth B. Cooper, Chief, Nuclear Power Division, Military Constructions, Office of Chief of Engineers, Washington, D.C., "Nuclear Reactors." (Selected Second Classmen)

#### DEPARTMENT OF SOCIAL SCIENCES

Mr. William C. Sullivan, Assistant Director, FBI, Washington, D.C., "Communism in the United States." (Selected Second and Third Classmen)

Prof. William Y. Elliott, American University, "Preconditions of Constitutional Democracy." (Selected First, Second and Third Classmen)

Prof. Samuel P. Huntington, Harvard University, "Beyond Deterrence." (Selected First and Second Classmen)

Dr. Thomas J. McCormick, Director Vassar College Art Gallery, "Renaissance Art." (Selected Third Classmen)

#### DEPARTMENT OF TACTICS

Col. A. N. Griffiths and Maj. W. J. O'Connor, British Army Staff, British Embassy, Washington, D.C., "Anti-Terrorist Operations in Malaya." (First)

Col. J. G. Hill, Jr., Deputy Chief, G-3, 3d Corps, Fort Hood, Texas, "Counterinsurgency Planning and Operations in Vietnam." (First)

Col. A. R. Bolling, DCSOPS, Dept of the Army, "U.S. Army World-Wide Counterinsurgency Commitment." (First)

Capt. J. J. Waldeck, Fort Benning, Ga., "Combat Experiences in Vietnam." (Third)

Brig. Gen. Robert L. Ashworth, OACSI, Dept of the Army, "Soviet and Red Chinese Armies." (First)

Col. Donald S. Bussey, Army War College, "Introduction to Missions and Structure." (Third)

#### OFFICE OF MILITARY PSYCHOLOGY AND LEADERSHIP

Gen. C. W. Abrams, Dept of the Army, (Senior Officer Orientation Program) (First)

Lt. Gen. C. H. Bonesteel III, Director of Special Studies, Office of Chief of Staff, D/A. (Senior Officer Orientation Program) (First)

Lt. Gen. W. W. Dick, Chief of Research & Development (Senior Officer Orientation Program) (First)

Prof. Theodore Haimann, St. Louis University, "Planning, Organizing and Directing in Professional Management." (Selected First Classmen)

Lt. Gen. Robert Hackett, Comptroller, Dept of the Army, "Management in the Military." (First)

Prof. Edwin P. Hollander, Director, Social Psychology, State University of New York at Buffalo, "Leaders, Groups and Influence." (First)

Mr. John J. McCarthy, Commissioner of Administration & Finance, State of Massachusetts, (Seminar), "Personnel Management." (Selected First Classmen)

Maj. Gen. Hamilton H. Howze, USA (Ret.), Vice President, Bell Helicopter, "The Leadership Challenge." (First)  
Brig. Gen. S. L. A. Marshall, USAR (Ret.). (To be announced.)  
(Selected First Classmen)

#### FACULTY LECTURES

Kermit Roosevelt Lecture. (Lecturer and subject to be announced.)  
Dr. Samuel B. Gould, President, The State University of New York,  
"Hidden Trends of Higher Education."

## AWARDS AND DISTINCTIONS

### Distinguished Cadets

In June of every year those cadets on the general merit roll of each class and on the graduating merit roll whose records show they have met the requirements set by the Academic Board are classed as "Distinguished." Distinguished cadets wear a five-pointed star, three-quarters of an inch in diameter, on each side of the collar of the dress coat and the full dress coat. The star is worn for one year by cadets who were distinguished in the work of the Second, Third, or Fourth Class year.

### Unit Achievement Awards

**SUPERINTENDENT'S AWARD (1958).** Two plaques awarded to the cadet company in each regiment which is judged to be the most outstanding in all areas of cadet endeavor.

**DEAN'S AWARD (1956).** Two plaques awarded to the academically outstanding company in each regiment.

**ARMY ATHLETIC ASSOCIATION AWARD (1958).** Two plaques awarded to the cadet company in each regiment which has made the greatest contribution to intercollegiate athletics.

**BANKERS ASSOCIATION OF NEW YORK AWARD (1924).** Two plaques awarded to the cadet company in each regiment ranking first in intramural athletics. A silver cup, formerly awarded to the cadet company ranking first in intramural athletics, is also inscribed with the designation of the winning companies.

**REGIMENTAL COMMANDER'S DRILL AWARD.** Two plaques awarded three times each year to coincide with the three drill seasons to the cadet company in each regiment that is the most outstanding in drill and ceremonies.

**GEORGE ALEXANDER CAMPBELL II MEMORIAL TROPHY (1949).** Established by members of the Class of 1951 in memory of their classmate, Cadet Campbell, who died during yearling summer camp, this silver cup is awarded to the company winning the brigade championship in intramural basketball.

**JARED WILLIAM MORROW MEMORIAL TROPHY (1951).** Established by Capt. Gerald D. Hall, USMA 1944, in memory of Lt. Jared William Morrow, USMA 1945, who died in battle in Korea in 1950, the silver cup is awarded to the company winning the brigade championship in intramural track.

**PALMER E. PIERCE FOOTBALL TROPHY (1943).** This silver cup, originally awarded to Gen. Palmer E. Pierce, USMA 1891, by the National Collegiate Athletic Association in recognition of his services to the Association, and bequeathed by him to the Army Athletic Association, is awarded to the company winning the brigade championship in intramural football.

**ARTHUR H. TRUXES MEMORIAL TROPHY (1951).** Established by Capt. Gerald D. Hall, USMA 1944, in memory of Capt. Arthur H. Truxes, Jr., USMA 1945, who died in battle in Korea in 1950, this silver cup is awarded to the company winning the brigade championship in intramural cross country.

**INTRAMURAL ATHLETIC AWARDS.** Plaques are awarded to the companies winning the brigade championships in each intramural sport; smaller plaques are awarded to brigade runners-up.

## **Individual General Awards**

**THE HOWITZER MEMORIAL AWARD (1952).** A set of books in memory of the late Lt. Arthur M. Apmann, Jr., USMA 1950, to the Editor of the "Howitzer."

**ARMY TIMES AWARD (1956).** A wrist watch presented in the name of the Army Times to the Editor of "The Pointer."

**ASSOCIATION OF THE UNITED STATES ARMY AWARD (1961).** A wrist watch presented in the name of the Association of the United States Army to the cadet who best exemplified the traditions of the Military Academy and the United States Army.

**FRANCIS VINTON GREENE MEMORIAL AWARD (1920).** A set of books given in memory of Maj. Gen. Francis Vinton Greene, USMA 1870, to the cadet standing number one in the general order of merit at graduation.

**MILITARY ORDER OF WORLD WARS AWARD (1942).** A wrist watch presented to the graduating cadet who has made the greatest improvement since the completion of his fourth-class year.

**ASSOCIATION OF GRADUATES AWARD (1965).** A silver tray presented in behalf of the Association of Graduates for excellence in all fields of cadet endeavor.

**THE SAMUEL A. DANIEL MEMORIAL AWARD (1965).** A silver tray presented in the name of Mrs. Samuel A. Daniel to the Cadet-in-Charge of the Cadet Chapel Choir.



## Individual Military Awards

**CHARLES G. DAWES AWARD (1929).** The Pershing Sword, given in the name of the late Brig. Gen. Charles G. Dawes to the First Captain, to commemorate General Pershing's being First Captain of the Corps of Cadets in 1886.

**ASSOCIATION OF GRADUATES AWARDS (1942).** A \$100 series E bond presented by the Association of Graduates to the cadet in the Second Class, and \$50 and \$75 series E bonds to the cadets in the Third and Fourth Classes outstanding in military efficiency and leadership.

**THE KNOX TROPHY (1910).** A silver cup presented by the Sons of the Revolution in the State of New York to the cadet with the highest rating in military efficiency.

**THE GENERAL JOHN J. PERSHING AWARD (1948).** A wrist watch given by the Army and Navy Union, USA, to the cadet with the highest rating in tactics.

**THE GENERAL DOUGLAS MACARTHUR AWARD (1952).** A pistol given by the Army and Navy Union (Department of New York) to the cadet officer commanding the First Regiment, USCC.

**ARMY AND NAVY UNION LADIES AUXILIARY AWARD (1952).** A pistol given by the Ladies Auxiliary of the Army and Navy Union (Department of New York) to the cadet officer commanding the Second Regiment, USCC.

**CLASS OF 1927 AWARD (1957).** A wrist watch given by the Class of 1927, USMA, to the outstanding cadet company commander, First Regiment, USCC.

**THE LEADERSHIP FOUNDATION AWARD (1962).** A wrist watch given by the Leadership Foundation to the outstanding cadet company commander, Second Regiment, USCC.

**THE GENERAL JOHN H. FORNEY HISTORICAL SOCIETY AWARD (1963).** A set of luggage presented to a graduating cadet for Military Excellence in First Class Tactics.

## Individual Academic Awards

**AMERICAN LEGION AWARD (1935).** A stereo-phonograph given by the National Organization of the American Legion to the graduating cadet with the highest rating in chemistry.

**DAUGHTERS OF THE UNITED STATES ARMY AWARD (1962).** A silver cigarette box given by the Daughters of the United States Army to the graduating cadet with the highest rating in advanced chemistry.

**ARMED FORCES COMMUNICATIONS AND ELECTRONICS AWARD**

(1948). A transistor radio given by the Armed Forces Communications and Electronics Association to the graduating cadet with the highest rating in electricity.

COLONIAL DAUGHTERS OF THE SEVENTEENTH CENTURY AWARD (1934). A set of books given by the National Society, Colonial Daughters of the Seventeenth Century, to the graduating cadet with the highest rating in English.

LADIES AUXILIARY OF THE VETERANS OF FOREIGN WARS AWARD (1939). A pair of binoculars given by the Ladies Auxiliary of the Veterans of Foreign Wars of the United States to the graduating cadet with the highest rating in Fourth Class English.

STEBUN SOCIETY OF AMERICA AWARD (1936). A wrist watch given by the Steuben Society of America to the graduating cadet with the highest rating in German.

NATIONAL SOCIETY, DAUGHTERS OF THE AMERICAN COLONISTS (1964). A portable typewriter given by the National Society Daughters of the American Colonists to the cadet with the highest rating in Spanish.

ORDER OF LAFAYETTE, INC. (1964). A plaque given by the order of Lafayette Inc., to the cadet with the highest rating in French.

DAUGHTERS OF FOUNDERS AND PATRIOTS OF AMERICA AWARD (1942). A wrist watch given by the National Society, Daughters of Founders and Patriots of America, to the graduating cadet with the highest rating in Portuguese.

THE U. S. GRANT AWARD (1932). A wrist watch given by the Women's Relief Corps, Auxiliary to the Grand Army of the Republic, to the graduating cadet with the highest rating in engineering fundamentals.

SONS OF THE AMERICAN REVOLUTION AWARD (1962). A pistol given by the National Society of the Sons of the American Revolution to the graduating cadet with the highest rating in advanced engineering fundamentals.

THE ENVIRONMENT AWARD (1958). A wrist watch awarded by friends of West Point for the highest rating in Environment.

AMERICAN BAR ASSOCIATION AWARD (1941). A set of books given by the American Bar Association to the graduating cadet with the highest rating in law.

UNITED DAUGHTERS OF THE CONFEDERACY AWARD (1931). A saber, known as the Robert E. Lee Saber, given by the United Daughters of the Confederacy to the graduating cadet with the highest rating in mathematics.

DAUGHTERS OF THE AMERICAN REVOLUTION AWARD (1930). A portable typewriter given by the National Society, Daughters of the American Revolution, to the graduating cadet with the highest rating in mechanics of fluids.

THE CLIFTON CARROLL CARTER AWARD (1962). A pistol presented in the name of Mrs. Mai C. Carter as a memorial to the late Brig. Gen. Clifton Carroll Carter, USMA 1899, to the graduating cadet with the highest rating in Second Class mechanics of solids.

GENERAL WILLIAM A. MITCHELL AWARD (1942). A set of books given by Mrs. William A. Mitchell in memory of General William A. Mitchell, USMA 1902, to the graduating cadet with the highest rating in military engineering and military history.

THE EISENHOWER AWARD (1951). A silver tray presented in the name of Mr. Charles P. McCormick to the graduating cadet for excellence in military psychology and leadership.

THE LESLIE R. GROVE AWARD (1957). A silver tray presented in behalf of the Association of Graduates to the graduating cadet with the highest rating in nuclear physics.

THE COLONEL JAMES L. WALSH MEMORIAL AWARD (1956). A rifle presented in the name of the American Ordnance Association to the graduating cadet with the highest rating in ordnance engineering.

THE 306TH INFANTRY AWARD (1954). A wrist watch given by the Walter B. Tunick Estate to the graduating cadet achieving excellence in physical education over the four-year course.

VETERANS OF FOREIGN WARS AWARD (1937). A camera given by the Veterans of Foreign Wars of the United States to the graduating cadet with the highest rating in physics.

MILITARY ORDER OF FOREIGN WARS AWARD (1929). A wrist watch given by the National Commandery, Military Order of Foreign Wars, to the graduating cadet with the highest rating in the First Class course in social sciences.

THE CLASS OF 1930 AWARD (1954). A silver bowl, presented in the name of the late Honorable Edgar Bromberger, former City Magistrate of the City of New York, to the graduating cadet with the highest rating in the Second Class course in social sciences.

THE BENJAMIN KAUFMAN AWARD (1963). A set of books presented in the name of the National Ladies Auxiliary, Jewish War Veterans of the United States, in honor of Mr. Benjamin Kaufman, winner of World War I Congressional Medal of Honor, to the graduating cadet with the highest rating in humanities.

INTERCOLLEGIATE DEBATING AWARD (1947). Two wrist watches given by the Consul General of Switzerland in the United States for excellence in intercollegiate debating.

THE BRIGADIER GENERAL CHARLES J. BARRETT MEMORIAL AWARD (1964). A wrist watch presented in the name of General Jacob L. Devers to the graduating cadet with the highest rating in Russian.

THE PERUVIAN ARMY AWARD (1964). A plaque presented by the Peruvian Army to the graduating cadet ranking number one in General Order of Merit for four years.

THE HERMAN BEUKEMA MEMORIAL AWARD (1965). A silver pitcher presented in the name of the Beukema family and the Military Education Foundation to the graduating cadet for excellence in Modern History.

### Individual Athletic Awards

ARMY ATHLETIC ASSOCIATION TROPHY (1904). A silver tray is given by the Army Athletic Association to the cadet who has rendered the most valuable service to athletics during his career as a cadet.

THE COLONEL THRUSTON HUGHES AWARD (1939). A silver tray, purchased with the interest from a fund of \$2,000 presented by Col. Thruston Hughes, USMA 1909, is given to the most valuable player of the football team.

THE GENERAL JOHN W. COFFEY MEMORIAL AWARD (1952). A silver tray given by Mrs. John W. Coffey in memory of Brig. Gen. John W. Coffey, USMA August 1917, to the captain of the baseball team.

THE EBER SIMPSON MEMORIAL TROPHY (1947). A silver tray purchased with the interest from a fund of \$2,000 presented by Col. George Simpson in memory of his son, Capt. Eber Simpson, USMA June 1943, is given to the captain of the basketball team.

THE COLONEL DAVID MARCUS MEMORIAL AWARD (1949). A silver tray purchased with the interest from a fund of \$2,000 established in memory of Col. David Marcus, USMA 1924, is given to the outstanding boxer in the graduating class.

THE EASTERN COLLEGIATE ATHLETIC CONFERENCE AWARD (1959). The Eastern Collegiate Athletic Conference Merit Award is given to the graduating cadet excelling in athletics and scholarship.

THE EDGERTON AWARD (1908). A silver tray purchased under the terms of a legacy presented by Mrs. Wright Prescott Edgerton in memory of her husband, Col. Wright Prescott Edgerton, USMA 1874, is given to the captain of the football team.

THE THOMAS WEST HAMMOND MEMORIAL AWARD (1958). A silver tray, presented in the name of Mr. Chester Hammond in memory of his father, Col. Thomas West Hammond, USMA 1905, is given to the outstanding lineman on the football team.

THE RINGSDORF AWARD (1961). A silver tray, donated by Cols. Samuel D. Ringsdorf, USMA August 1917, and Paschal H. Ringsdorf, USMA 1923, is given to the Army player who contributed most to the team effort in the Army-Navy football game.

THE COLONEL JOHN A. ROBENSON MEMORIAL AWARD (1961). A silver tray, presented in the name of Mrs. Abigail R. Boylan in memory of her father, Col. John A. Robenson, USMA 1910, is given to the outstanding player on the 150-pound football team.

THE PIERCE CURRIER FOSTER MEMORIAL TROPHY (1900). Two silver trays purchased under the terms of the will of Mrs. Anna A. Foster in memory of her son, Pierce Currier Foster, USMA 1899, are given to the cadets ranking first and second in gymnastics.

THE HAL BEUKEMA MEMORIAL AWARD (1955). A silver tray, donated by members of the family, former and present officers in the Department of Social Sciences, USMA, and a group of former friends, in memory of Maj. Henry Shaw Beukema, USMA 1944, is given to the outstanding player on the hockey team.

INTRAMURAL AWARDS (1966). Winners of brigade individual sports contests such as track and cross country are awarded silver medallions; runners-up receive bronze medallions.

THE WILLIAM P. FICKES MEMORIAL TROPHY (1938). A silver tray, purchased with the interest from a fund presented by Mr. and Mrs. Walter M. Fickes in memory of their son, William P. Fickes, USMA 1936, is given to the captain of the lacrosse team.

THE GENERAL GEORGE S. PATTON, JR., MEMORIAL TROPHY (1956). A pistol presented by John M. McNally in memory of Gen. George S. Patton, Jr., USMA 1909, is given to the captain of the pistol team.

CLASS OF 1923 AWARD (1949). A silver tray, purchased with the interest from a fund of \$2,000 contributed by the Class of 1923, is given to the outstanding member of the swimming team in the graduating class.

THE FRED E. MCANIFF MEMORIAL AWARD (1961). A silver tray, presented by the West Point Chapter of the Society of the Daughters of the United States Army, is given to the outstanding member of the track team.

THE GENERAL WILLIAM L. BELL, JR., MEMORIAL AWARD (1957).



A silver tray presented by Mrs. William Lewis Bell, Jr., in memory of her husband, Maj. Gen. William Lewis Bell, Jr., USMA 1929, is given to the best man in floor exercise.

THE FRANCIS HENRY SCHOEFFEL MEMORIAL AWARD (1963). A rifle presented in the name of Francis Henry Schoeffel, USMA 1891, by Mrs. Francis Henry Schoeffel to the graduating captain of the rifle team.

THE COLONEL RUSSELL P. "RED" REEDER, JR., AWARD (1965). A silver tray presented by friends to the outstanding player on the Baseball Team.

THE ATHLETIC BOARD AWARD (1965). A silver tray presented in the name of the Athletic Board to the outstanding member of the Golf Team.

THE ATHLETIC BOARD AWARD (1965). A silver tray presented by the Director of Athletics to the outstanding player on the Tennis Team.

THE ATHLETIC BOARD AWARD (1964). A silver tray presented to the outstanding runner on the Cross Country Team.

THE ATHLETIC BOARD AWARD (1964). A silver tray presented to the outstanding player on the Soccer Team.

THE ATHLETIC BOARD AWARD (1965). A silver tray presented to the outstanding player on the Squash Team.

THE ATHLETIC BOARD AWARD (1965). A silver tray presented to the outstanding member of the Wrestling Team.

### Rhodes Scholarships

From 1923, when cadets of USMA first began to compete, to 1966, 48 Rhodes Scholarships have been awarded to Academy graduates who attended Oxford as Army or Air Force officers on active duty.

Elections for Rhodes Scholarships are held every year in December for entrance into Oxford in October of the following year. The scholarships are for a minimum period of 2 years study; a third year may be awarded if the Rhodes scholar presents a plan of study acceptable to his service and to the Rhodes trustees.

Cadets desiring to compete for a scholarship must be accredited by the Academic Board which screens them carefully. A Committee of Selection in each State recommends two candidates every year to a District Committee for six States. The District Committees each select four individuals from the candidates selected by the State committees. Candidates may apply either in the State in which they live or in the State in which they have received at least 2 years of their college education.

The basis of selection is that section of Cecil Rhodes' will in which are mentioned the four groups of desired qualities: (1) literary and scholastic ability and attainments; (2) qualities of manhood, truth, courage, devotion to duty, sympathy for and protection of the weak, kindliness, unselfishness, and fellowship; (3) exhibition during school days of moral force of character and of instincts to lead and to take an interest in his schoolmates; (4) fondness for and success in manly outdoor sports such as cricket, football, and the like.

The selection is not made, however, on any system of averaging up a man's qualifications. The first two groups of qualities are most important and committees are particularly interested in distinction of intellect and character giving promise of outstanding achievement in later life.

### Olmsted Scholarships

The George Olmsted Foundation currently awards annually two scholarships to graduates of the Military Academy for two years' study at a foreign university in other than an English speaking country. Officers are considered for scholarships upon completion of

a minimum of three years of service. The Foundation makes the selection from names submitted for consideration to the Department of the Army by the Academic Board. Selection criteria are scholastic, including linguistic ability, and traits of character and leadership demonstrated at West Point and in the military service after graduation. Universities attended by Military Academy graduates under this program have included those of Geneva, Grenoble, Heidelberg, Brussels, Tokyo, Freiburg, Paris, and Lyons.

### **National Science Foundation Fellowships**

Since 1961 cadets have been permitted to compete for National Science Foundation Graduate Fellowships. These fellowships, which are awarded for periods of either nine months or one year, are open to graduates of all accredited institutions. Selection is based on academic records, recommendations regarding each applicant's ability, scores achieved in examinations designed to test scientific aptitude and achievement, and other evidence of potential ability for scientific study or work. In 1962 one cadet was awarded a fellowship and ten cadets received honorable mention; in 1963 five cadets were awarded fellowships and nine cadets received honorable mention; in 1964 five cadets were awarded fellowships and 23 cadets received honorable mention; in 1965 two cadets were awarded fellowships and nine cadets received honorable mention.

### **Oak Ridge Institute of Nuclear Studies Fellowships**

The U.S. Atomic Energy Commission has established special fellowships in nuclear science and engineering to encourage promising students to undertake graduate studies in these fields at a university of their choice. Selection of fellows is based on academic grades, breadth of science and engineering courses completed, recommendations, Scientific Aptitude Examination results, and career objectives. Of the eight cadet applicants who participated in the national competition during 1964, all eight were awarded a Special Fellowship for graduate study in the nuclear field. Three out of four Cadets were successful in 1965.

### **Distinguished Graduates**

Distinguished Graduates of the Military Academy, the top five per cent of a class in general order of merit, are guaranteed graduate schooling leading to the Master's degree within their first five years of service. The Distinguished Graduate may elect to go to graduate school directly from West Point or to defer his entry to a later year.

## BOARD OF VISITORS

The Board of Visitors to the United States Military Academy was created not long after the founding of the institution itself. On 1 July 1815, the Secretary of War, William H. Crawford, approved "A Regulation for the Government of the Military Academy" providing for the appointment of a Board to consist of five "competent gentlemen," under the presidency of the Superintendent. The Board was instructed to attend each of the annual and semi-annual examinations at West Point and report thereon to the Secretary.

At present the Boards are appointed under the provisions of an Act of Congress approved 29 June 1948. This act specifies that a Board of Visitors shall visit the Military Academy each year and inquire into the state of morale and discipline, curriculum, instruction, physical equipment, fiscal affairs, academic methods, and other matters relating to West Point which the Board may decide to consider, and submit a written report to the President of the United States giving its views and recommendations pertaining to the United States Military Academy. The personnel of the Board, the Act provides, shall be as follows:

*a.* The Chairman of the Committee on Armed Services of the Senate, or his designee;

*b.* Three other Members of the Senate to be appointed by the Vice President, two of whom shall be members of the Committee on Appropriations of the Senate;

*c.* The Chairman of the Committee on Armed Services of the House of Representatives, or his designee;

*d.* Four other Members of the House of Representatives to be appointed by the Speaker of the House of Representatives, two of whom shall be members of the Committee on Appropriations of the House of Representatives;

*e.* Six persons to be appointed by the President.

### BOARD OF VISITORS 1965

*Appointed by the President of the United States:* Mr. Joseph A. Beirne, President, Communication Workers of America; General J. Lawton Collins (Ret.), Vice-Chairman, Pfizer International, Washington, D.C.; Mr. Edward B. Hanify, Member, Ropes and Gray, Boston, Mass.; Dr. Frederick Lawson Hovde, President, Purdue University; Major General Leif J. Sverdrup, USAR

(Ret.), Chairman of the Board and Chief Executive Officer, Sverdrup and Parcel Associates, Inc., St. Louis, Mo.

*Appointed by the Vice President of the United States:* Senator E. L. Bartlett, Alaska; Senator J. Caleb Boggs, Delaware; Senator John O. Pastore, Rhode Island.

*Appointed by the Speaker of the House of Representatives:* Representative Glenard P. Lipscomb, California; Representative William H. Natcher, Kentucky; Representative Alexander Pirnie, New York; Representative Olin E. Teague, Texas.

*Ex-Officio Members of the Board:* Senator Richard B. Russell, Georgia (represented by Senator Sam J. Ervin, North Carolina), Representative L. Mendel Rivers, South Carolina (represented by Representative Otis G. Pike, New York).



## ASSOCIATION OF GRADUATES

The Association of Graduates, USMA, is a voluntary membership organization open to all graduates of the Military Academy and to former cadets who were honorably discharged after at least one academic term at the Academy. Over 95 percent of the 18,634 living graduates, and many former cadets who did not graduate, are members.

The Association was founded at New York City in 1869 under the personal leadership of Brig. Gen. Sylvanus Thayer, USMA 1808, and Maj. Gen. Robert Anderson, USMA 1825, hero of Fort Sumter. Annual meetings have been held at West Point during June Week since 1870. Its purpose is "To acquire and disseminate information on the history, activities, objectives, and methods of the Military Academy; to acquire and preserve historical materials relating to that institution; and to encourage and foster the study of military science there by worthy young men."

The Bureau of Internal Revenue has ruled that the Association is tax-exempt and all gifts, contributions, donations, and bequests thereto are likewise exempt from taxation. The Association of Graduates is the only organization through which alumni as a body can contribute their time, effort, and money toward the enhancement of their Alma Mater.

Under the aegis of the Association four annual events have grown to become important traditions. At the Alumni Parade in June Week the Long Gray Line, led by the Superintendent, the President of the Association of Graduates, and the Oldest Graduate Present, marches from Cullum Memorial Hall to Thayer Monument. There, in the presence of the Corps and a multitude of visitors, homage is paid to the "Father of the Military Academy" and to the memory of those graduates who died during the preceding year. It has been said that this gathering of alumni represents, by those attending, more United States history than any other group of similar size.

Homecoming Day is celebrated annually in the Fall at one of the home football games. This occasion, which was first established in 1958, has proved quite successful and affords the alumni a second annual opportunity to visit their alma mater and renew old acquaintances. In addition to the football game, a review in honor of the alumni is held by the Corps of Cadets.

Founders Day, 16 March, is celebrated at West Point and at nearly 150 other places throughout the world. These celebrations traditionally



Ernest Orlando Lawrence, 1958



John Foster Dulles, 1959



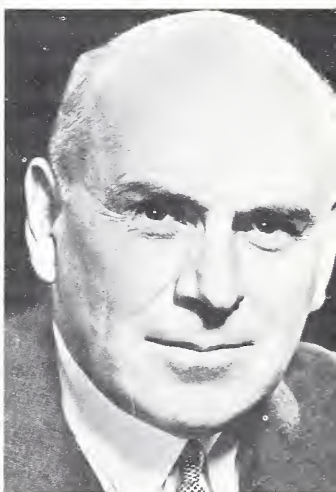
Henry Cabot Lodge, 1960



Dwight David Eisenhower, 1961



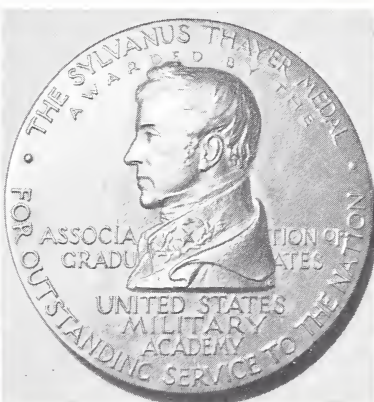
Douglas MacArthur, 1962



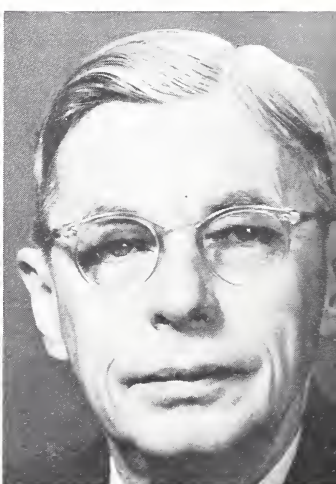
John J. McCloy, 1963



Robert A. Lovett, 1964



**RECIPIENTS  
OF THAYER AWARD**



James B. Conant, 1965

include a dinner, attended by all alumni within commuting distance, and speeches by the oldest and youngest graduates present. The Association of Graduates supports these annual celebrations in many ways.

Each year since 1958 the Association of Graduates has presented the Sylvanus Thayer Award, a gold medal, to the United States citizen whose record of service to his country exemplifies devotion to the principles expressed in the motto of West Point—"Duty, Honor, Country." Recipients of the award have been Dr. E. O. Lawrence in 1958, John Foster Dulles in 1959, Henry Cabot Lodge in 1960, Dwight D. Eisenhower in 1961, Douglas MacArthur in 1962, John J. McCloy in 1963, Robert A. Lovett in 1964, and Dr. James B. Conant in 1965.

The major programs of the Association include maintenance of biographical files on all graduates; publication of necrologies and class reports in *Assembly*; receipt and disposition of historical items; support and establishment of West Point Societies; maintenance of an up-to-date list of addresses; correspondence concerning graduates; presentation of awards to cadets; selection of the person to receive the Sylvanus Thayer award; and organization of alumni activities at West Point.

Information is disseminated through two publications published by the West Point Alumni Foundation, Inc., a nonprofit corporation. The annual *Register of Graduates and Former Cadets* includes a summary of the record of each graduate and where he is and what he is doing. The quarterly magazine *Assembly* under the editorial sponsorship of the Association of Graduates gives current information about the Academy and its graduates.

The Association's administrative organization consists of a President and five Vice Presidents, elected annually; a Secretary-Treasurer; and 36 Trustees, 12 of whom are elected annually for terms of 3 years. The Association's office is located in Cullum Memorial Hall.

Cooperating with the Association are the following autonomous West Point Societies:

<i>State</i>	<i>West Point Society of—</i>
<i>Alabama</i>	ALABAMA (Birmingham)
	MOBILE
<i>Arizona</i>	PHOENIX
	SOUTHERN ARIZONA (Tucson)
<i>California</i>	LOS ANGELES
	MONTEREY PENINSULA (Monterey)
	SAN DIEGO
	SAN FRANCISCO BAY AREA
<i>Colorado</i>	DENVER
	PIKES PEAK REGION (Colorado Springs)
<i>Connecticut</i>	CONNECTICUT (Hartford)

*State*  
*District of Columbia*  
*Florida*

*Georgia*

*Hawaii*  
*Illinois*

*Indiana*  
*Kentucky*  
*Louisiana*  
*Maryland*  
*Massachusetts*  
*Michigan*  
*Minnesota*  
*Missouri*

*New Mexico*  
*New York*

*North Carolina*  
*North Dakota*  
*Ohio*

*Oklahoma*

*Oregon*  
*Pennsylvania*

*Philippine Islands*  
*South Carolina*  
*Tennessee*  
*Texas*

*Washington*  
*Wisconsin*

*West Point Society of—*  
DISTRICT OF COLUMBIA  
CANAVERAL  
CENTRAL FLORIDA (Orlando)  
FLORIDA WEST COAST (Tampa)  
NORTH FLORIDA (Jacksonville)  
SOUTH FLORIDA (Miami)  
ATLANTA  
SAVANNAH  
COLUMBUS (Fort Benning)  
HAWAII (Honolulu)  
CENTRAL ILLINOIS (Champaign-Urbana)  
CHICAGO  
INDIANAPOLIS  
LOUISVILLE  
MID-GULF (New Orleans)  
MARYLAND (Baltimore)  
NEW ENGLAND (Boston)  
MICHIGAN (Detroit)  
MINNESOTA (Minneapolis)  
KANSAS CITY  
ST. LOUIS  
ALBUQUERQUE  
NEW YORK (New York City)  
ROCHESTER  
WESTERN NEW YORK (Buffalo)  
CAPITOL DISTRICT (Albany)  
WESTERN NORTH CAROLINA (Asheville)  
NORTH DAKOTA (Bismarck)  
CENTRAL OHIO (Columbus)  
CINCINNATI  
CLEVELAND  
NORTHWESTERN OHIO (Van Wert)  
DAYTON  
CENTRAL OKLAHOMA (Oklahoma City)  
EASTERN OKLAHOMA (Tulsa)  
PORTLAND  
CENTRAL PENNSYLVANIA (Harrisburg)  
PHILADELPHIA  
WESTERN PENNSYLVANIA (Pittsburgh)  
PHILIPPINES (Manila)  
CHARLESTON  
TENNESSEE (Nashville)  
EL PASO AREA  
HOUSTON  
NORTH TEXAS (Dallas)  
SOUTH TEXAS (San Antonio)  
SEATTLE  
MILWAUKEE



## USMA GIFTS PROGRAM

The West Point Superintendent's Fund was established in 1961 by the West Point Alumni Foundation, Inc., a non-profit tax exempt organization formed and managed by a group of dedicated alumni for the purpose of lending support to the accomplishment of the Military Academy's mission. The fund has as its objective the obtaining of private donations, gifts and bequests to be utilized in accomplishing projects of benefit to the Corps of Cadets and to West Point for which government funds cannot be expected. Its solicitation of contributions is carried out by a Fund Committee headed by General Lucius D. Clay and advised by a number of other distinguished graduates. Its expenditures in support of beneficial projects are approved by a Policy Committee based on recommendations by the Superintendent. The Policy Committee is composed of: the President of the West Point Alumni Foundation; the President of the Association of Graduates; the President of the West Point Post Planning Board; the Chief of Staff of the Army's designated representative; the President of the Fund Committee; an advisor to the Fund Committee; and the Secretary-Treasurer of the Foundation.

The controls exercised in management of the Fund assure its use for the purpose intended. It is neither an endowment nor an entertainment fund. Nor does the support it provides supplant or conflict with government support of the United States Military Academy. The program support, equipment and facilities provided by projects undertaken with Fund monies are those which lie beyond the limits of expected government support and which are considered highly desirable enhancements of Cadet life.

In the five years of its existence the Fund has supported a number of projects and is adding daily to its list of accomplishments. Ski slope equipment and facilities have been vastly improved enabling a material expansion in the cadet instructional and recreational ski program. The summer recreational program has also been broadened by the gifts from parents of two classes of power boats for use at Camp Buckner in water sports activities. Graduating classes have provided a number of benefits, both functional and educational, through group contributions. These include library collections, historic paintings and prints, a magnificent 6-foot diameter geophysical globe, memorial drinking fountains and benches, and gifts to the West Point Museum. Gifts from the Rockwell Foundation have made possible the conversion of Benet Hall in the Old Ordnance Compound into a reception building for the First Class



and will permit a renovation of Crozier Hall in that same compound within the near future. A grant from the Mellon Charitable Trusts has brought about the construction of a long desired formal amphitheater at Trophy Point. The cultural and aesthetic spirit of West Point is being further enhanced by the gift of an alumnus which will permit the installation of a 330-bell electronic carillon in the Cadet Chapel. Annual support of the Student Conference on United States Affairs and the West Point Debate Council activities by another distinguished graduate is being channeled through the Fund. And a number of projects providing programs, equipment and facilities for the growing number of cadet extracurricular activities in all fields of endeavor have been made possible by contributions from both alumni and friends. As the Corps of Cadets expands and the Military Academy grows in response to the challenges of the modern world, the West Point Superintendent's Fund seeks to keep pace with the ever increasing scope of cadet interests and activities.

Requests for additional information on the Fund should be directed to the Secretary-Treasurer, West Point Alumni Foundation, Inc., West Point, New York 10996.



Class of 1936 Memorial Fountain





## SUPERINTENDENTS OF THE MILITARY ACADEMY

1. JONATHAN WILLIAMS  
Maj. Corps of Engineers----15 Apr 1802—20 June 1803
2. JONATHAN WILLIAMS  
Lt. Col. Corps of Engineers<sup>1</sup>. 19 Apr 1805—31 July 1812
3. JOSEPH G. SWIFT  
Col. Corps of Engineers-----31 July 1812—24 Mar 1814
4. ALDEN PARTRIDGE  
Capt. Corps of Engineers----3 Jan 1815—28 July 1817
5. SYLVANUS THAYER  
Capt. Corps of Engineers----28 July 1817—1 July 1833
6. RENE E. DE RUSSY  
Maj. Corps of Engineers----1 July 1833—1 Sept 1838
7. RICHARD DELAFIELD  
Maj. Corps of Engineers----1 Sept 1838—15 Aug 1845
8. HENRY BREWERTON  
Capt. Corps of Engineers----15 Aug 1845—1 Sept 1852
9. ROBERT E. LEE  
Capt. Corps of Engineers----1 Sept 1852—31 Mar 1855
10. JOHN G. BARNARD  
Capt. Corps of Engineers----31 Mar 1855—8 Sept 1856
11. RICHARD DELAFIELD  
Maj. Corps of Engineers----8 Sept 1856—23 Jan 1861
12. PIERRE G. T. BEAUREGARD  
Capt. Corps of Engineers<sup>2</sup>---23 Jan 1861—28 Jan 1861
13. RICHARD DELAFIELD  
Maj. Corps of Engineers<sup>2</sup>---28 Jan 1861—1 Mar 1861
14. ALEXANDER H. BOWMAN  
Maj. Corps of Engineers----1 Mar 1861—8 July 1864
15. ZEALOUS B. TOWER  
Maj. Corps of Engineers----8 July 1864—8 Sept 1864
16. GEORGE W. CULLUM  
Lt. Col. Corps of Engineers..8 Sept 1864—28 Aug 1866

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<sup>1</sup> Major Williams resigned 20 June 1803, on a point of command, and pending its settlement on 19 April 1805, when he again returned to service as Chief Engineer, no permanent Superintendent was appointed, the command devolving upon the senior officer of the Corps of Engineers present for duty.

<sup>2</sup> Captain Beauregard, by order of John B. Floyd, Secretary of War, relieved Major Delafield from the Superintendency, but was himself displaced five days later by direction of the succeeding Secretary of War Joseph Holt, the command again devolving upon Major Delafield.

17. THOMAS G. PITCHER  
Col. Infantry<sup>3</sup>-----28 Aug 1866—1 Sept 1871
18. THOMAS H. RUGER  
Col. Infantry-----1 Sept 1871—1 Sept 1876
19. JOHN M. SCHOFIELD  
Maj. Gen. US Army-----1 Sept 1876—21 Jan 1881
20. OLIVER O. HOWARD  
Brig. Gen. US Army-----21 Jan 1881—1 Sept 1882
21. WESLEY MERRITT  
Col. Cavalry-----1 Sept 1882—1 July 1887
22. JOHN G. PARKE  
Col. Corps of Engineers-----28 Aug 1887—24 June 1889
23. JOHN M. WILSON  
Lt. Col. Corps of Engineers--26 Aug 1889—31 Mar 1893
24. OSWALD H. ERNST  
Maj. Corps of Engineers----31 Mar 1893—21 Aug 1898
25. ALBERT L. MILLS  
1st Lt. Cavalry-----22 Aug 1898—31 Aug 1906
26. HUGH L. SCOTT  
Maj. Cavalry-----31 Aug 1906—31 Aug 1910
27. THOMAS H. BARRY  
Maj. Gen. US Army-----31 Aug 1910—31 Aug 1912
28. CLARENCE P. TOWNSLEY  
Col. Coast Artillery Corps--31 Aug 1912—30 June 1916
29. JOHN BIDDLE  
Col. Corps of Engineers-----1 July 1916—31 May 1917
30. SAMUEL E. TILLMAN  
Col. US Army-----13 June 1917—11 June 1919
31. DOUGLAS MACARTHUR  
Brig. Gen. US Army-----11 June 1919—30 June 1922
32. FRED W. SLADEN  
Brig. Gen. US Army-----1 July 1922—23 Mar 1926
33. MERCH B. STEWART  
Brig. Gen. US Army-----24 Mar 1926—5 Oct 1927
34. EDWIN B. WINANS  
Maj. Gen. US Army-----23 Oct 1927—25 Feb 1928
35. WILLIAM R. SMITH  
Maj. Gen. US Army-----26 Feb 1928—30 Apr 1932

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<sup>3</sup> The Superintendents were selected from the Corps of Engineers until passage of the law of 13 July 1866, which opened the Superintendency to the entire Army. By the Act of 12 June 1856, the local rank of Colonel was conferred upon the Superintendent.



36. WILLIAM D. CONNOR  
Maj. Gen. US Army-----1 May 1932—17 Jan 1938
37. JAY L. BENEDICT  
Brig. Gen. US Army-----5 Feb 1938—17 Nov 1940
38. ROBERT L. EICHELBERGER  
Brig. Gen. US Army-----18 Nov 1940—12 Jan 1942
39. FRANCIS B. WILBY  
Maj. Gen. US Army-----13 Jan 1942—4 Sept 1945
40. MAXWELL D. TAYLOR  
Maj. Gen. US Army-----5 Sept 1945—28 Jan 1949
41. BRYANT E. MOORE  
Maj. Gen. US Army-----28 Jan 1949—17 Jan 1951
42. FREDERICK A. IRVING  
Maj. Gen. US Army-----1 Feb 1951—31 Aug 1954
43. BLACKSHEAR M. BRYAN  
Lt. Gen. US Army-----3 Sept 1954—14 July 1956
44. GARRISON H. DAVIDSON  
Lt. Gen. US Army-----15 July 1956—30 June 1960
45. WILLIAM C. WESTMORELAND  
Maj. Gen. US Army-----1 July 1960—28 June 1963
46. JAMES B. LAMPERT  
Maj. Gen. US Army-----29 June 1963—6 Jan 1966
47. DONALD V. BENNETT  
Maj. Gen. US Army-----10 Jan 1966—

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## EXAMPLES OF PHYSICAL APTITUDE EXAMINATION TESTS

A combination of the following tests, which result in the candidate using all of his physical facilities, constitutes the Physical Aptitude Examination of the Military Academy.

- (1) Basketball throw for distance using a regulation basketball.
- (2) Basketball throw (modified). Regulation basketball is thrown overhand for distance from the kneeling position.
- (3) Broad jump for distance, standing.
- (4) Broad jump for distance, three in succession. Standing start with three successive broad jumps.
- (5) Burpee test for 20 seconds. Continuous movements from the standing position to the squat, to the leaning rest, to the squat, and back to the standing position.
- (6) Dipping on parallel bars. Raising and lowering oneself on parallel bars by means of the arms. The body is lowered until upper arm passes the horizontal.
- (7) Dodge run. A run through a maze placed on a gymnasium floor.
- (8) Hop, step, and jump. With a 10-foot run to a take-off line take a hop, a step, and a jump to gain as great a distance as possible.
- (9) Hurdle run. A run through a maze placed on a gymnasium floor.
- (10) Medicine ball put. A 6-pound medicine ball is put using the same movement as required for a shotput.
- (11) Pull-ups. Chinning oneself on a horizontal bar, grasping bar with back of hand toward face.
- (12) Push-ups. Standard push-ups starting from the leaning rest position.
- (13) Rope climb (7 seconds). Climb a regulation gymnasium rope as high as possible in 7 seconds, using hands and feet or hands alone, starting from a standing position.
- (14) Sit-ups (2 minutes). These are to be performed with a partner holding the feet.
- (15) Sit-ups (for speed). These are to be performed in 30 seconds while lying on a gymnasium mat with toe hooked under a bar.
- (16) Softball throw. For distance using a regulation softball. (12-inch circumference.)



- (17) Running, shuttle. This test is a shuttle run on a gymnasium floor between two turning blocks 25 yards apart.
- 100 yards.
  - 150 yards.
  - 250 yards.
  - 300 yards.
- (18) Running 300 yards on indoor track. 11 laps to the mile.
- (19) Vault for height, standing. From a standing position vault over a horizontal bar by touching it with only the hands using either flank or front vault.
- (20) Vertical jump. The difference between the height an individual can reach and the height he can jump and reach.

## SPECIAL MEDICAL CONSIDERATIONS

The following special medical examination considerations are listed in order that candidates, prospective candidates, their private physicians and dentists may have readily available medical requirements for entrance to the Academy. Candidates authorized to have this medical examination accomplished at one of the facilities listed in appendix II will contact the hospital, in writing, requesting an appointment.

**MEDICAL HISTORY:** The medical history will be compiled with particular care. Inquiries will be made in detail concerning all illnesses, injuries, and operations which the candidates may have incurred, and elaborated upon when indicated. Failure to fully document these items invariably results in disappointment to all concerned when medical disqualification is determined later. A history of familial diseases will be investigated with thoroughness. If the candidate has received medical care which significantly affects his physical status, then he will be required, whenever practicable, to submit evidence from attending physicians or from hospital records concerning this medical care.

**BODY BUILD AND MEASUREMENTS:** Build will be recorded as slender, medium or heavy. In addition, where obesity exists it will also be recorded. Poor physical development, regardless of actual height and weight ratio, is a cause for rejection.

The following standard weight table according to height and age applies.

*Standards of Weight According to Height*

Height (inches)	Weight		Height (inches)	Weight	
	Min.	Max.		Min.	Max.
66.....	107	191	73.....	135	231
67.....	111	196	74.....	139	237
68.....	115	202	75.....	143	243
69.....	119	208	76.....	147	248
70.....	123	214	77.....	151	254
71.....	127	219	78.....	153	260
72.....	131	225			

A range in height from 66 inches to 78 inches inclusive is required. A waiver for overweight or up to 2 inches below the minimum height may be considered in the Department of the Army provided the candi-

date possesses exceptional educational qualifications or has an outstanding military record or has demonstrated outstanding abilities. Height will be carefully measured without shoes or stockings and will be recorded to the nearest quarter of an inch. The weight will be taken without shoes or clothing and recorded to the nearest pound.

**TEETH:** The teeth, mouth, and gums will be thoroughly examined by a practicing dental surgeon. The examination will include bitewing roentgenograms and, when indicated, periapical roentgenograms. Notation will be made as to the serviceability or unserviceability of all dentures and bridges. Defects and infections, including periodontal disease, will be recorded and classified as to severity. Dental examinations of applicants wearing appliances for active orthodontic treatment will be deferred until such appliances are removed.

Dental standards for acceptance are as follows:

(1) A satisfactory relationship between the mandible and the maxilla of such nature that adequate prosthodontic replacements may be fabricated should it become necessary to remove any or all of the remaining natural teeth.

(2) That existing prosthodontic appliances meet generally acceptable standards of design, construction, and tissue adaptation. In the case of an existing lower prosthodontic appliance, that it be retained and adequately stabilized by sufficient serviceable natural teeth.

(3) No carious teeth or improperly restored, or filled, natural teeth.

(4) Must not have a disfiguring appearance of the existing natural anterior teeth as a result of spaces, malalignment or malocclusion.

(5) A sufficient number of serviceable anterior and posterior natural or artificial teeth so opposed as to permit the proper mastication of a normal diet.

Causes for rejection are:

(1) Failure to meet the requirements and standards set forth above.

(2) Diseases of the jaws or associated tissues which are not easily remediable would incapacitate the individual and might prevent his satisfactory performance of duty.

(3) Orthodontic appliances required for the active movement of teeth.

The dental examiner will not determine dental acceptability for the candidate. Department of the Army will notify the candidate with regard to acceptance or rejection.

Candidates having correctible dental defects will be informed of same

and instructed that they will be responsible for having the defects corrected prior to reporting to West Point in July. Candidates will also be informed that they will have in their possession at the time of reporting at West Point a statement from a practicing dental surgeon stating that all dental defects have been remedied, and listing all dental corrections made for the purpose of complying with USMA entrance requirements.

**EYES AND VISION:** Any degree of uncorrected vision is acceptable provided it is correctible to 20/20 in each eye. In all cases the actual vision of each eye and the correcting lenses, if required, will be reported. Careful inquiry will be made by the board of symptoms of asthenopia, and any symptoms elicited will be recorded. The refractive error will be determined by a cycloplegic examination, unless medically contraindicated, in all cases regardless of uncorrected visual acuity. Errors of refraction will be a cause for rejection, even though the visual acuity falls within acceptable limits. Total hyperopia of more than five and one-half (5.50) diopters in any meridian of either eye, total myopia of more than five and one-half (5.50) diopters in any meridian in either eye, astigmatic error of more than three (3.00) diopters in either eye, or anisometropia of more than three and one-half (3.50) diopters is cause for rejection.

Muscle balance of the eyes will be determined by either the Armed Forces Vision Tester or white Maddox rod test at 20 feet in all cases and will be reported in prism diopters. Esophoria of more than 15 prism diopters, exophoria of more than 10 prism diopters, and hyperphoria of more than 2 prism diopters are causes for rejection. Strabismus of any degree is disqualifying.

Both eyes must be free from any disfiguring or incapacitating abnormality and from acute or chronic disease. A comment will be included on the examination form to indicate whether candidate wears contact lenses.

Inability to distinguish and identify without confusion the color of an object, substance, material, or light that is uniformly colored a vivid red or vivid green is cause for rejection.

**EARS AND HEARING:** Auditory acuity of all candidates will be determined by the audiometer. Loss of hearing, as determined by the audiometer, must not be greater than 15 decibels in any of the frequencies 500, 1,000, and 2,000, nor greater than 40 decibels in the frequency 4,000. Each candidate will be tested at the following frequencies: 500, 1,000, 2,000, 3,000, and 4,000. Existing perforation of the membrana

tympani, regardless of etiology, is a cause for rejection. Both ears must be free from any disfiguring or incapacitating abnormality and from acute or chronic disease.

**NARES:** Septal deviation, hypertrophic rhinitis, or other conditions which result in 50 percent or more obstruction of either airway, or which interfere with drainage of a sinus on either side, are causes for rejection.

**SKIN:** Psoriasis or acne, moderately severe, and the deeply pitted scars resulting therefrom, vitiligo or other skin defect which is disfiguring or unsightly; and bromidrosis which is more than mild, are causes for rejection.

**HEART AND BLOOD VESSELS:** An electrocardiogram will be accomplished in all cases where there is a history of rheumatic fever or questionable cardiac findings, a thorough investigation will be made, including detailed history, fluoroscopic examination of the heart and a 6-foot chest X-ray film permitting accurate determination of the cardio-thoracic ratio, in addition to a careful general medical examination. Any evidence of organic heart disease will be considered cause for rejection. When a candidate is found to have a systolic blood pressure of 140 millimeters or more, or diastolic of 85 or more, readings will be taken each morning and afternoon over a period of three or more successive days, in order to determine whether the hypertension is persistent and, if possible, the cause thereof. Persistent blood pressure, systolic 140 millimeters or more, diastolic of more than 90 millimeters on repeated examination is a cause for rejection. All readings will be taken with the individual relaxed and in the sitting position after a period of normal physical activity. A period of recumbency will not be resorted to prior to taking readings. Pulses of the upper and lower extremities should be palpated and the hands and feet should be observed for abnormalities of color and temperature and for pallor on elevation. The absence of a pulse or the presence of pallor or temperature change will be cause for a more detailed vascular evaluation.

Varicosities of any extremity unless correctible by treatment or mild in degree are cause for rejection. Resultant pigmentation, dermatitis, ulceration, demonstrable edema, or pain substantiated by medical evidence, are causes for rejection.

**SEROLOGIC TESTS:** A serologic test for syphilis is performed on all candidates. An authentic history of syphilis of any type is cause for rejection without further laboratory procedure.

**GENITOURINARY SYSTEM:** Persistent albuminuria of any type or the



persistence of casts in the urine will be cause for rejection, even though the etiology cannot be determined. Other causes for rejection: phimosis; epispadias or pronounced hypospadias; amputation or deformity of the penis; atrophy, deformity, or maldevelopment of both testicles; or undescended testicles of any degree.

**ORTHOPEDIC:** Suitable exercises will be employed to determine the strength of the arches. When pes planus is more than mild, a note will be made as to the presence or absence of bulging of the inner border due to rotation or eversion of the astragalus and any callosities. Pes planus, symptomatic, or with marked bulging of the inner border of the astragalus will be a cause for rejection when it would interfere with military service.

Pes cavus with clawing of the toes and calluses beneath the metatarsal heads is cause for rejection.

Where a history of injury to any joint is elicited, note will be made as to the presence or absence of lateral or other abnormal mobility, stiffness, traumatic arthritis, muscle atrophy, or weakness. X-ray and clinical evaluation will be made, when indicated.

Lateral deviation of the spine from the normal midline of more than 1 inch is cause for X-ray and clinical evaluation.

**ASTHMA:** Asthma or a history of asthma, except a history of childhood asthma with a trustworthy history of freedom from symptoms since the twelfth birthday, is a cause for rejection.

**ABDOMINAL WALL:** Hernia of any variety is a cause for rejection. The surgical repair of hernia requires a minimum of 60 days for qualification and must be without sequelae.

**MEDICAL QUALIFICATIONS:** The Army bases its decision to medically qualify a young man on medical facts revealed in a thorough medical examination. Candidates unable to satisfy the minimum requirements are not suited for commissions in the Regular Army and consequently are not eligible for training at the Military Academy. Some of the causes for rejection listed above are correctible. The decision to have remedial defects corrected rests with the candidate. When these defects are corrected subsequent to an examination, the candidate will submit complete information relative to the corrective procedure to the medical facility conducting the medical qualification examination or to The Adjutant General, ATTN: AGPB-M, Department of the Army, Washington, D.C. 20315.

## FACILITIES AUTHORIZED TO CONDUCT QUALIFYING MEDICAL EXAMINATION

### ALABAMA

Daleville—Fort Rucker  
Mobile—Brookley AFB  
Montgomery—Maxwell AFB

### ALASKA

Adak—U.S. Naval Station  
Anchorage—Elmendorf AFB, Fort  
Richardson  
Kodiak—U.S. Naval Station

### ARIZONA

Chandler—Williams AFB  
Cochise County—Fort Huachuca  
Tucson—Davis-Monthan AFB

### ARKANSAS

Blythesville—Blythesville AFB  
Jacksonville—Little Rock AFB

### CALIFORNIA

Alameda—U.S. Naval Air Station  
Camp Pendleton  
Edwards—Edwards AFB  
El Centro—U.S. Naval Air Facility  
Fairfield—Travis AFB  
Ignacio—Hamilton AFB  
Imperial Beach—U.S. Naval Auxil-  
iary Air Sta., Ream Fld.  
Lemoore—U.S. Naval Air Station  
Lompoc—Vandenberg AFB  
Long Beach—U.S. Naval Hospital,  
USS Haven  
Los Alamitos (Long Beach)—U.S.  
Naval Air Station  
Marysville—Beale AFB  
Merced—Castle AFB  
Moffett Field—U.S. Naval Air  
Station  
Monterey—Fort Ord, U.S. Naval Air  
Facility  
Oakland—U.S. Naval Hospital  
Point Mugu—U.S. Naval Missile Ctr  
Riverside—March AFB  
Sacramento—Mather AFB, McClellan  
AFB  
San Bernardino—Norton AFB

San Diego (Miramar)—U.S. Naval  
Air Station; (North Island)—  
Naval Air Station, U.S. Naval  
Hospital

San Francisco—Letterman GH  
Santa Ana—U.S. Marine Corps Air  
Sta El Toro

Victorville—George AFB

### COLORADO

Colorado Springs—USAF Academy  
Denver—Fitzsimons GH, Lowry  
AFB

### DELAWARE

Dover—Dover AFB

### FLORIDA

Cecil Field—U.S. Naval Air Station  
Homestead—Homestead AFB  
Jacksonville—U.S. Naval Air Station,  
U.S. Naval Hospital  
Key West—U.S. Naval Air Station,  
U.S. Naval Hospital  
Panama City—Tyndall AFB  
Pensacola—U.S. Naval Air Station,  
U.S. Naval Hospital  
Sanford—U.S. Naval Air Station  
Tampa—MacDill AFB  
Valparaiso—Eglin AFB  
Whiting Field—U.S. Naval Air  
Station

### GEORGIA

Albany—Turner AFB  
Atlanta—Fort McPherson, U.S.  
Naval Air Station  
Columbus—Fort Benning  
Glynco—U.S. Naval Air Station  
Groveton—Fort Gordon  
Hinesville—Fort Stewart  
Savannah—Hunter AFB  
Valdosta—Moody AFB  
Warner Robins—Robins AFB

### HAWAII

Honolulu—Hickam AFB, Tripler GH

## IDAHO

Mountain Home—Mountain Home  
AFB

## ILLINOIS

Belleville—Scott AFB  
Glenview—U.S. Naval Air Station  
Great Lakes—U.S. Naval Hospital  
Highland Park—Fort Sheridan  
Rantoul—Chanute AFB

## INDIANA

Indianapolis—Fort Benjamin  
Harrison  
Peru—Bunker Hill AFB

## KANSAS

Junction City—Fort Riley  
Leavenworth—Fort Leavenworth  
Olathe—U.S. Naval Air Station  
Salina—Schilling AFB  
Topeka—Forbes AFB  
Wichita—McConnell AFB

## KENTUCKY

Hardin County—Fort Knox

## LOUISIANA

Alexandria—England AFB  
New Orleans—U.S. Naval Air  
Station  
Shreveport—Barksdale AFB

## MAINE

Bangor—Dow AFB  
Brunswick—U.S. Naval Air Station  
Limestone—Loving AFB

## MARYLAND

Andrews AFB—U.S. Naval Air Facility  
Annapolis—U.S. Naval Academy  
Bainbridge—U.S. Naval Training  
Center  
Bethesda—U.S. Naval Hospital  
Camp Springs—Andrews AFB  
Odenton—Fort George G. Meade  
Patuxent—U.S. Naval Air Station

## MASSACHUSETTS

Ayer—Fort Devens  
Boston—Boston Army Base  
Chelsea—U.S. Naval Hospital

Chicopee Falls—Westover AFB  
Falmouth—Otis AFB  
South Weymouth—U.S. Naval Air  
Station

## MICHIGAN

Grosse Ile—U.S. Naval Air Station  
Gwinn—KI Sawyer AFB  
Kincross—Kincheloe AFB  
Mount Clemens—Selfridge AFB  
Oscoda—Wurtsmith AFB

## MINNESOTA

Minneapolis—U.S. Naval Air Station

## MISSISSIPPI

Biloxi—Keesler AFB  
Columbus—Columbus AFB  
Meridian—U.S. Naval Auxiliary Sta-  
tion

## MISSOURI

Grandview—Richards-Gebaur AFB  
Knob Noster—Whiteman AFB  
Waynesville—Fort Leonard Wood

## MONTANA

Glasgow—Glasgow AFB  
Great Falls—Malmstrom AFB

## NEBRASKA

Lincoln—Lincoln AFB  
Omaha—Offutt AFB

## NEVADA

Las Vegas—Nellis AFB  
Reno—Stead AFB

## NEW HAMPSHIRE

Portsmouth—Pease AFB, U.S. Naval  
Hospital

## NEW JERSEY

Lakehurst—U.S. Naval Station  
Oceanport—Fort Monmouth  
Wrightstown—Fort Dix, McGuire AFB

## NEW MEXICO

Alamogordo—Holloman AFB  
Albuquerque—Kirtland AFB  
Clovis—Cannon AFB  
Roswell—Walker AFB

## NEW YORK

Newburgh—Stewart AFB  
New York—U.S. Naval Air Station  
Plattsburgh—Plattsburgh AFB  
Rome—Griffiss AFB  
St. Albans, L.I.—U.S. Naval Hospital  
West Hampton Beach, L.I.—Suffolk  
County AFB  
West Point—U.S. Military Academy

## NORTH CAROLINA

Camp Lejeune—U.S. Naval Hospital  
Cherry Point—U.S. Marine Corps Air  
Station  
Fayetteville—Fort Bragg  
Goldsboro—Seymour Johnson AFB  
New River—U.S. Marine Corps Air  
Facility

## NORTH DAKOTA

Minot—Minot AFB

## OHIO

Columbus—Lockbourne AFB  
Dayton—Wright-Patterson AFB

## OKLAHOMA

Altus—Altus AFB  
Burns Flat—Clinton-Sherman AFB  
Lawton—Fort Sill  
Oklahoma City—Tinker AFB

## OREGON

Portland—Portland International Air-  
port

## PENNSYLVANIA

Carlisle—Carlisle Barracks  
Johnsville—U.S. Naval Air Facility  
Middletown—Olmstead AFB  
Philadelphia—U.S. Naval Hospital  
Phoenixville—Valley Forge GH  
Willow Grove—U.S. Naval Air Station

## RHODE ISLAND

Newport—U.S. Naval Hospital, U.S.  
Naval Station  
Quonset Point—U.S. Naval Air Station

## SOUTH CAROLINA

Beaufort—U.S. Marine Corps Air Sta-  
tion, U.S. Naval Hospital  
Charleston—Charleston AFB, U.S.  
Naval Hospital  
Columbia—Fort Jackson  
Sumter—Shaw AFB

## SOUTH DAKOTA

Rapid City—Ellsworth AFB

## TENNESSEE

Clarkesville—Fort Campbell  
Memphis—U.S. Naval Hospital, U.S.  
Naval Air Station  
Smyrna—Stewart AFB

## TEXAS

Abilene—Dyess AFB  
Amarillo—Amarillo AFB  
Austin—Bergstrom AFB  
Beeville—U.S. Naval Aux Air Station  
Big Spring—Webb AFB  
Corpus Christi—U.S. Naval Hospital,  
U.S. Naval Air Station  
Dallas—U.S. Naval Air Station  
Del Rio—Laughlin AFB  
El Paso—Biggs AFB, William Beau-  
mont GH  
Fort Worth—Carswell AFB  
Kingsville—U.S. Naval Air Station  
Killeen—Fort Hood  
Laredo—Laredo AFB  
Lubbock—Reese AFB  
San Antonio—Fort Sam Houston,  
Lackland AFB, Randolph AFB  
Sherman—Perrin AFB  
Waco—James Connally AFB  
Wichita Falls—Sheppard AFB

## UTAH

Ogden—Hill AFB

## VIRGINIA

Fairfax County—Fort Belvoir  
Hampton—Langley AFB  
Lee Hall—Fort Eustis  
Norfolk—U.S. Naval Air Station  
Old Point Comfort—Fort Monroe  
Petersburg—Fort Lee  
Portsmouth—U.S. Naval Hospital

- Quantico—U.S. Marine Corps Air Station, U.S. Naval Hospital  
Virginia Beach—U.S. Naval Air Station
- WASHINGTON  
Bremerton—USNH  
Moses Lake—Larson AFB  
Oak Harbor—U.S. Naval Air Station  
Seattle—U.S. Naval Air Station  
Spokane—Fairchild AFB  
Tacoma—Fort Lewis, McChord AFB
- WISCONSIN  
Madison—Truax Field
- WYOMING  
Cheyenne—Francis E. Warren AFB
- DISTRICT OF COLUMBIA  
Washington—Walter Reed GH
- CANAL ZONE  
Balboa—Albrook AFB  
Fort Clayton  
Rodman—U.S. Naval Station
- CUBA  
Guantanamo Bay—U.S. Naval Hospital
- ENGLAND  
London—U.S. Naval Support Activity  
Middlesex—RAF West Ruislip
- GERMANY  
Heidelberg—USAH  
Wiesbaden—Wiesbaden AB
- GUAM  
U.S. Naval Hospital
- ITALY  
Naples—U.S. Naval Support Activity
- JAPAN  
Camp Zama  
Honahu—Tachikawa AB  
Sasebo—Fleet Activities  
Yokuska—U.S. Naval Hospital
- NEWFOUNDLAND  
Argentia—U.S. Naval Station  
Stephenville—Ernest Harmon AFB
- PHILIPPINES  
Luzon—Clark AFB  
Subic Bay—U.S. Naval Station
- PUERTO RICO  
Aguadilla—Ramey AFB  
San Juan—U.S. Naval Station
- SPAIN  
Rote—U.S. Naval Air Station
- GH—General Hospital, AH—Army Hospital, AFB—Air Force Base



The following military installations will conduct USMA candidate testing commencing 1 March 1967. Those installations marked by an asterisk (\*) will also conduct testing commencing 11 January 1967. In his letter of nomination, the Test Site will be designated for each candidate. Requests for a change of Test Site should be directed to The Adjutant General, ATTN: AGPB-M, Headquarters, Department of the Army, Washington, D. C. 20315.

## ALASKA

Anchorage—Fort Richardson

## ARIZONA

Cochise County—Fort Huachuca

## CALIFORNIA

\*San Francisco—Letterman GH

\*San Diego—San Diego NAS

## COLORADO

\*Denver—Fitzsimons GH

## FLORIDA

Tampa—MacDill AFB

Key West—Key West NAS

## GEORGIA

Atlanta—Fort McPherson

\*Columbus—Fort Benning

## HAWAII

Tripler Army Hospital

## ILLINOIS

\*Highland Park—Fort Sheridan

## INDIANA

\*Indianapolis—Fort Benjamin

Harrison

## KANSAS

\*Leavenworth—Fort Leavenworth

## KENTUCKY

Hardin County—Fort Knox

## MARYLAND

\*Laurel—Fort George G. Meade

## MASSACHUSETTS

\*Ayer—Fort Devens

## MICHIGAN

Mount Clemens—Selfridge AFB

## MISSISSIPPI

Biloxi—Keesler AFB

## MISSOURI

Waynesville—Fort Leonard Wood

## NEW JERSEY

\*Wrightstown—Fort Dix

## NEW YORK

Brooklyn NAS—Brooklyn

## NORTH CAROLINA

Fayetteville—Fort Bragg

## OHIO

Columbus—Lockbourne AFB

## OKLAHOMA

Lawton—Fort Sill

## PENNSYLVANIA

Carlisle—Carlisle Barracks

\*Phoenixville—Valley Forge GH

## PUERTO RICO

San Juan—Fort Brooke

## SOUTH CAROLINA

Columbia—Fort Jackson

## TENNESSEE

Clarksville—Fort Campbell

## TEXAS

El Paso—William Beaumont GH

\*San Antonio—Fort Sam Houston

## UTAH

Ogden—Hill AFB

## VIRGINIA

\*Fairfax County—Fort Belvoir

## WASHINGTON

\*Tacoma—Fort Lewis

## WASHINGTON, D. C.

Walter Reed GH—Physical Examining  
Section (Outpatient Clinic)

## CANAL ZONE

Fort Clayton

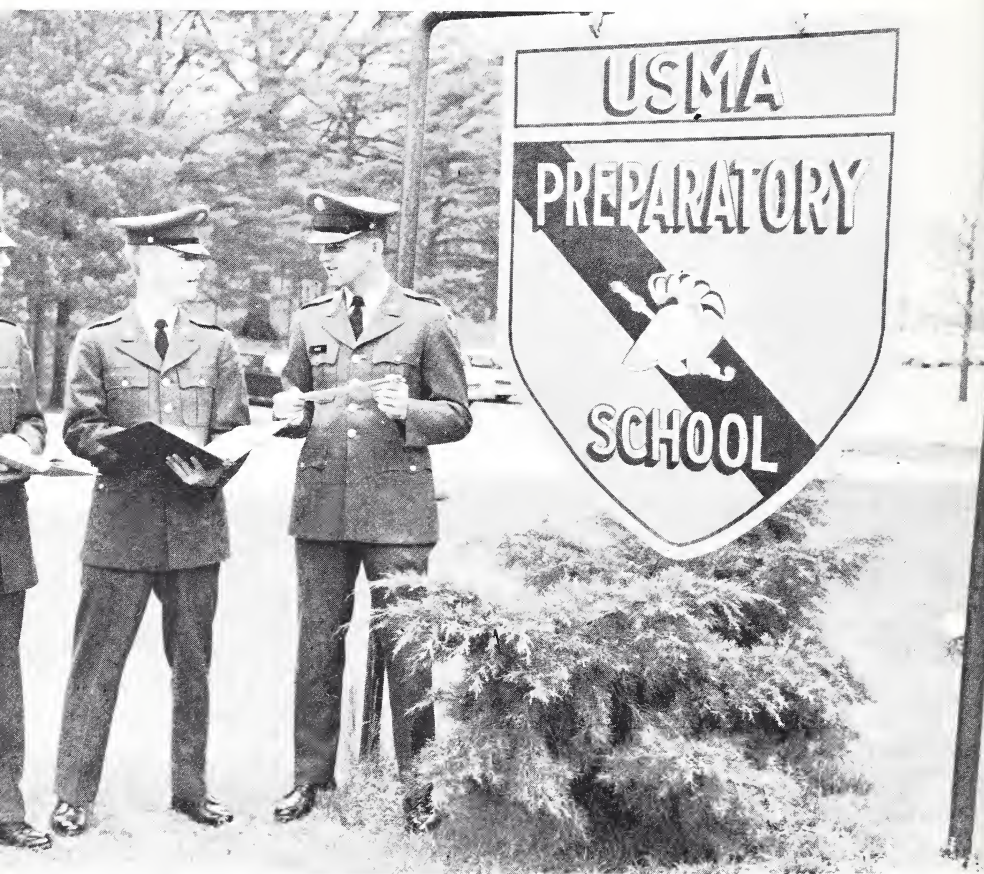
## GERMANY

Heidelberg, USAH

## JAPAN

Camp Zama

GH—General Hospital, AH—Army Hospital,  
AFB—Air Force Base



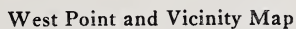
The United States Military Academy Preparatory School is an Army training facility where servicemen on active duty are assigned for intense academic, physical and military training in anticipation of entering the United States Military Academy. All applicants must satisfy minimum academic and medical standards before transfer to the Preparatory School is authorized, and all must either be nominated, or eligible to compete, for admission to the Military Academy.

The training course runs from mid-August through May and enrollment at the start of the course is a primary requirement.

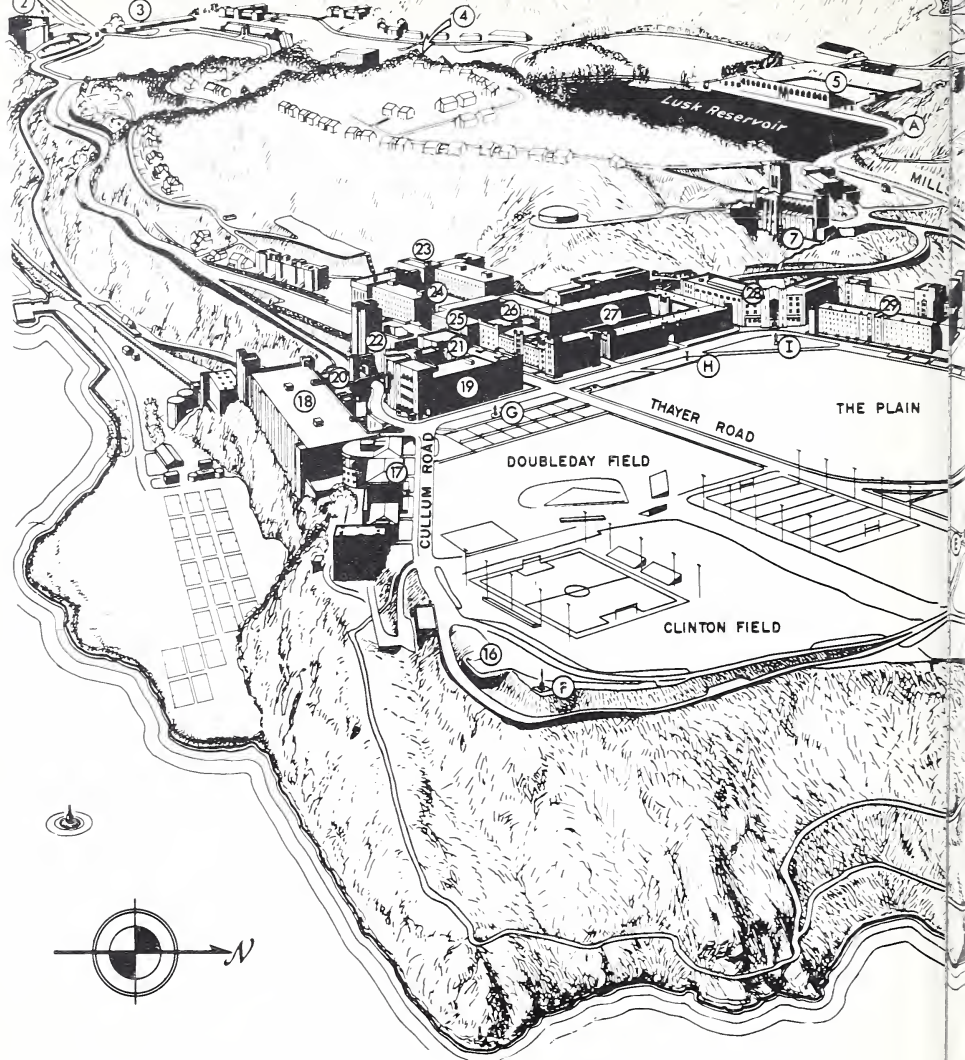
Inquiries may be addressed to The Adjutant General, ATTN: AGPB-M, Department of the Army, Washington, D.C. 20315.

# WEST POINT

## AND VICINITY







# LEGEND

- |                                 |                           |                   |
|---------------------------------|---------------------------|-------------------|
| 1. South Gate                   | 9. Catholic Chapel        | 17. Cullum Hall   |
| 2. Hotel Thayer                 | 10. Services Building     | 18. Thayer Hall   |
| 3. Visitors' Information Center | 11. Field House           | 19. Library       |
| 4. Smith Rink                   | 12. North Athletic Fields | 20. Museum        |
| 5. Michie Stadium               | 13. First Class Club      | 21. Bartlett Hall |
| 6. Fort Putnam                  | 14. Ordnance Laboratory   | 22. Headquarters  |
| 7. Cadet Chapel                 | 15. Trophy Point          | 23. Hospital      |
| 8. Delafield Pond               | 16. Fort Clinton          | 24. New South B   |



Post Proper  
United States Military Academy  
West Point, N. Y.  
\* \* \* 1965 \* \* \*

- 25. South Barracks
- 26. Headquarters, USCC
- 27. Central Barracks
- 28. Washington Hall
- 29. North Barracks
- 30. Gymnasium
- 31. Superintendent's Quarters
- 32. Commandant's Quarters

- A. Air Cadet Memorial
- B. Wirt Robinson Memorial
- C. Sedgwick Monument
- D. Battle Monument
- E. Washington Monument
- F. Kosciuszko Monument
- G. Patton Monument
- H. French Monument
- I. Thayer Monument



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